DEC 18 1944

DECEMBER, 1944

fuel oil & oil heat

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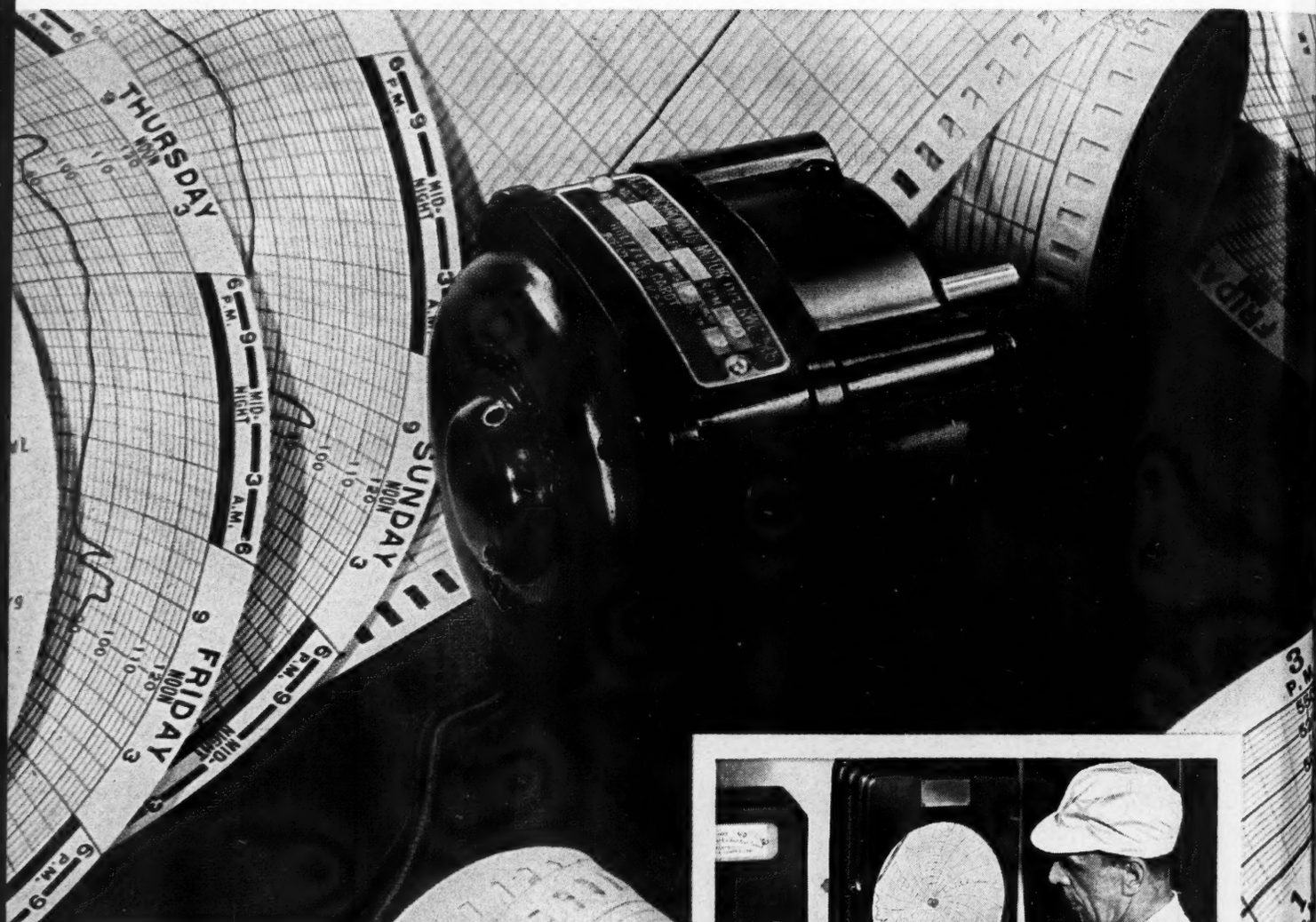
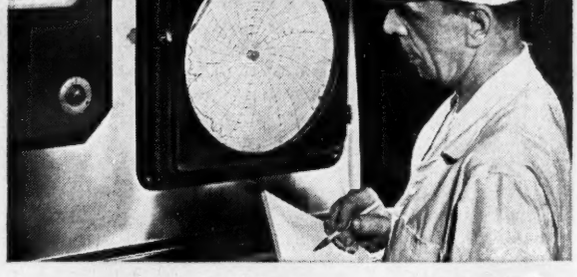
Increased Power and Constant Speed

...YET FITS MOTOR SPACE AVAILABLE





Typical Recorder Powered with Holtzer-Cabot Motor

The requirements of a manufacturer of instruments called for a constant speed motor that had more power than a standard clock motor previously used, yet still fitted the original space allowed.

Holtzer-Cabot designed the special synchronous motor, illustrated above, which not only filled the performance and space requirements, but saved the manufacturer the cost of redesigning and retooling to take a larger motor, and also made it possible to service instruments in customers' plants which had the old type of clock motor.

The specialized business of Holtzer-Cabot is the designing and building of special fractional H. P. motors to meet special operating requirements.

Although, today, our entire facilities are devoted to manufacturing special motors for the armed forces, our motor development engineers will gladly discuss your post-war fractional H. P. motor requirements with you.

Special Motors Designed To Fit The Application

HOLTZER-CABOT

Division of First Industrial Corporation

Designers and Builders of Special Fractional HP Motors and Electrical Apparatus

125 AMORY STREET, BOSTON 19, MASSACHUSETTS • CHICAGO, ILLINOIS • NEW YORK, NEW YORK • PHILADELPHIA, PENNSYLVANIA

Names in the News

J. F. Deitz, formerly regional manager for the Gilbert & Barker Mfg. Co., West Springfield, Mass., has become Assistant Sales Manager. *K. S. Edwards,* who has been serving in a special capacity with the Manufacturing Division of Gilbert & Barker, is now Sales Promotion Manager, and *R. B. White,* supervisor of the Advertising Division has become Advertising Manager.

George E. Simons has been appointed manager of advertising and sales promotion for General Electric's air conditioning and commercial refrigeration divisions. *Mr. Simons* was formerly connected with the General Electric X-Ray Corp., Chicago, Ill.

Donald G. Cameron, electrical engineer, has been appointed recently to head the Engineering Department of Penn Electric Switch Co., Goshen, Ind. *Mr. Cameron* will be directly in charge of all engineering work on Penn Products.

Walter J. Krause, electrical engineer for The Ohio Electric Mfg. Co., Cleveland, Ohio, died on November 9. He joined this company in 1919 and had just recently completed his twenty-fifth year.

Bruce K. Brown has resigned as assistant deputy petroleum administrator and has returned to his old position with Indiana Standard, Chicago, Ill., as general

(*Continued on next page*)

fueloil & oil heat

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"GEE IT'S FUN BEING AN H.C. LITTLE DEALER"

H. C. LITTLE BURNER CO. dealers are a happy lot. They make barrels of dough, because the public just loves to buy H. C. Little oil-burning home heating equipment.

No kidding! For example, before the war Mr. Edwin G. Peters, Manager, Gulf Radio Sales, St. Petersburg, Fla., wrote:

As you know, we have in the past used various pieces of your equipment and have been very well satisfied. However, our greatest enthusiasm came this past year when we decided to advertise the floor furnace.

This advertising swamped us with inquiries that resulted in sales. The public response was greater by far than any other product we have ever advertised for sale. This includes appliances of all kinds. In the fourteen years of our business career in St. Petersburg, this is the first time that people have ever come in and asked to buy merchandise.

THIS IS THE FLOOR FURNACE MR. PETERS REFERRED TO →

HERE ARE ITS CHIEF FEATURES—

- Low First Cost
- Simple Installation
- No Basement Needed
- Burns Cheap Fuel – Low Cost No. 3 Oil (27°+ Diesel Oil)
- Ample Capacity for Abundant Warmth
- High Overall Efficiency
- Silent – No Hum or Roar
- Safe – Listed by the Underwriters' Laboratories
- Written Factory Guarantee With Every Unit
- Automatic Operation
- Thermostatic Control

AND . . .

These floor furnaces have the **only fully automatic electric ignition natural draft vaporizing type burner** which is available, not only in these units, but in a complete line of small home heating equipment.

YOU TOO can make barrels of money as an H.C. Little dealer. Write for a copy of our new booklet, "How to Get Real Profits in Postwar Heating," which tells how to get started.

H. C. LITTLE Burner Co.
HEAD OFFICE: SAN RAFAEL, CALIF.
Branches in Principal Cities

manager of research and development. *Mr. Brown* has been with PAW since November, 1941, when he joined the agency to organize the aviation gasoline program.

George J. Dunn has returned to the Master Kraft field organization of Harvey - Whipple, Inc. *Mr. Dunn* was with this Company for four years prior to the war. During the war he has been filling a special assignment in connection with the war production program.

Frank P. Gibbons has been appointed sales manager for the Viking Air Conditioning Corp., Cleveland, Ohio. *Mr. Gibbons* has been connected with this company since 1935, becoming well-known to the air conditioning and heating trade while representing Viking products. He more recently filled the positions of purchasing agent and assistant sales manager for Viking.

Paul Ryan, former president of the National Refining Company of Cleveland, Ohio, who recently has been serving with the Petroleum Industry War Council, has been elected a Vice-President of The M. W. Kellogg Co., Petroleum and chemical engineers of Jersey City, N. J., and New York.

H. F. Randolph, Vice-President of The International Heater Co., Utica, N. Y., spoke before the Massachusetts Oil Heating Association, Boston, November 21.

Shad Polier, recently Director of Enforcement of the Fuel Automotive and Consumers Durable Goods Division of the Office of Price Administration, and formerly attorney for The National Labor Relations Board has joined the law firm of Hays, St. John, Abramson & Schulman, New York.

TIME FOR CONSIDERATION ....

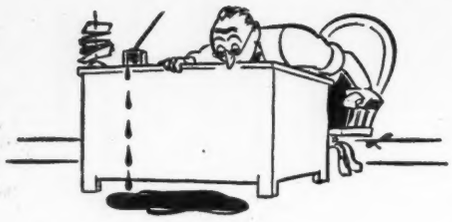
Now is the time
To give careful consideration
To your post war source of supply ...
MOR-SUN Research Engineers
Will offer you
New design for modern performance...
Our Industrial Artists
Will offer practical beauty ...
Our Production Engineers
Have new, war-born manufacturing techniques ...
Thought and inquiry
By our Merchandising Staff
Will assure closer manufacturer-dealer relations ...

It's Time for Consideration
Of all these points ...
Of course we cannot supply you now - but
MOR-SUN PRESSED STEEL Warm Air Furnaces
And the MOR-SUN Merchandising Policy
Will be worth waiting for.

MOR-SUN
PRESSED STEEL FURNACES

MORRISON
STEEL PRODUCTS, INC.
BUFFALO 7, NEW YORK

"The Sun Never Sets with MOR-SUN!"



Editorial leaks

Every business has its platitudes which are so often repeated that their fallacies are lost in the familiarity of the words. No less an expert than Adolph Hitler outlined in "Mein Kampf" the formula for manufacturing truth by persistent repetition of a lie. That formula is being used at present by some interested people who want to sell the oilheating industry a thoroughly stale bill of goods.

The story is being told persistently that all automatic heating equipment will be sold successfully through the same dealers. The idea is being planted that the "Battle of the Fuels" is a mirage; that a good oilburner dealer should be equally successful with stokers and gasburners; that the elimination of the hard-selling, one-product dealer will clear the sales atmosphere and increase volume. It assumes that the prospect knows what he wants and will buy it; that the dealer should offer automatic heating regardless of fuel, and customers come ready made.

The picture of the "All-Three" dealer who lets the customer buy the equipment of his choice is not a very attractive one for the sales-minded dealer who moves the greatest volume of oilburners, gasburners or stokers. That man has a message he wants to carry to his prospects—a firm belief in his product—and he abhors indolent selling as nature hates a vacuum. Waiting for a prospect to buy is one way to lose a sale, and the sales-minded dealer will be fighting to sell his equipment, rather than let the prospect knock himself out trying to come to a decision. The truth of the matter is that no real prospect ever has his mind made up. When he has, he ceases to be a prospect.

Country-wide promotion of the abstract idea of automatic heating may be desirable, but when the individual dealer engages in such star gazing he is lost. It is a dream that can lead only to a rude awakening. It would be as reasonable to promote mechanical transportation and expect automobile dealers to handle bicycles and airplanes in equal volume.

If the bright, new era of automatic heat were going to usher in the millenium, there should have been some hint of it in the past. But the past is strewn with skeletons that disprove the theory. There have been attempts to publish trade papers to the "Automatic Heating" business, but they have gone, one by one, for the plain reason that there is no such business. The occassional instances of oilburner dealers who have operated successful stoker departments, or have sold a number of gasburners, all were worthy of note. Feature stories were written about them because they were the exception rather than the rule. They became news by their very rarity. They do not constitute an industry, and there is no indication that such an industry is in the making. Look at the record:

In 1941, the last normal year, 34% of the oilburner dealers handled stokers, and 17% sold gasburners. This sounds impressive until we examine the record more closely, and discover that they sold twelve oilburners for every stoker and twenty oilburners for every gasburner. In other words, while these dealers were selling 333,250 oilburners they sold only 27,770 stokers, or 14% of the total stokers sold that year. They sold 16,000 gasburners, or 16% of the total gasburners and units. This is an average of less than two stokers per dealer, and one gasburner across the oilheating industry. Figures on oilburners sold by stoker and gasburner dealers would be no more impressive, proving that it requires sales enthusiasm to move equipment in volume. It requires a firm belief in the product and its service. True sales volume comes only from the man with a message for his prospects — the man who thoroughly believes that he has what the prospect needs, and is not content to wait for the prospect to take his choice.

No, Virginia, there is no Santa Claus! Those sales came from Momma and Poppa who worked like the devil to convert a lot of undecided prospects into customers. They helped the prospect make up his mind while others were waiting for him to buy. The same type of merchandising has sold the country its automobiles, electric refrigerators and oilburners—all sold against the competition of older entrenched products. All are accepted today because dealers believed in them and were not content to let the prospect take his choice. The Come-and-Take-Your-Pick school of selling has been too long with us in the heating business, and the results are the subject of at least one warning speech at every convention. It is long past time that the whole heating industry moved away from indolent selling, rather than toward it.

◈

While on the subject of selling, we would like to nudge one of our better contemporaries for what seems like an inconsistency. The very fine organization in question issued a press release recently which was headed, "Blank Insures Market Position," and follows with three pages of copy in which a diligent search fails to reveal a single reported action or plan for a direct attack on the market. Of engineering and research there was plenty, but nobody apparently had seen fit to delve actively into ways and means of moving these improved products into the hands of future customers.

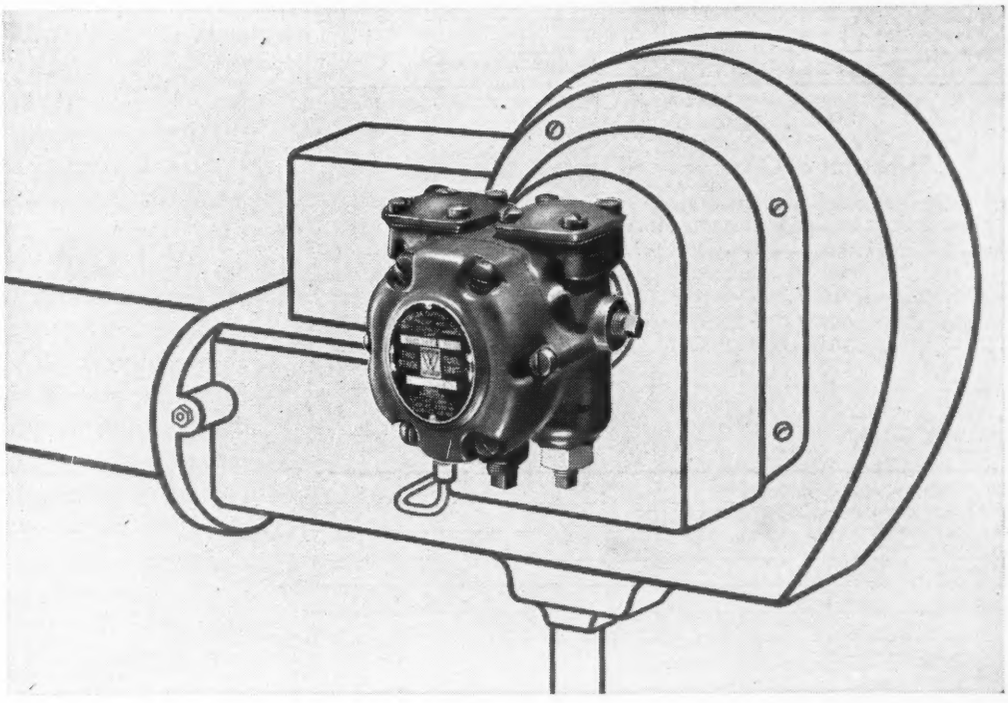
Pardon us, please, if we seem to insist that sales plans are important. Emerson, that sales consultant of the anti-bellum Mouse Trap Manufacturers Association, has long been dead, and his advice died with him. The better mouse trap of today has to be advertised and sold, and paths must be beaten to customers' doors. This does not mean that research, design, engineering and production are not important. All of them are, but the very heart of today's problem is sales. All the other planning and all the research is wasted unless somebody can be induced to put the product to work for him.

Production has become an exact science during this war. Neither the oilheating industry, nor the country at large, has any problem to get things built. Even at the depth of the depression, when manufacturing efficiency was frowned upon, we could build much more than we could sell, and the problem today is three times as big. The real problem is to get rid of the stuff as fast as we would like to produce it. That problem has to be solved.

The fact we put "Market" in our headlines proves we are conscious of its importance. Why, then, do we shy away from the hard work of licking it, and form committees only to engineer and manufacture?

MAKE SURE the New Oil Burner You Sell Is

WEBSTER ELECTRIC EQUIPPED



Many new oil burners will soon be ready for sale to replace worn out burners.

You dealers have experienced the outstanding performance of Webster Electric Fuel Units and Transformers on the oil burners you have serviced in the past few years. You will make sure that the replacement burners you will be selling are equipped with these Webster Electric units.

Webster Electric Fuel Units are not only easier to service but require less attention because of their design and quality construction. This enables the dealer to save time when repairs are necessary . . . increases profits because of fewer service calls.

Authorized Webster Electric Service Stations and representatives are located close at hand. They are stocked with repair parts and replacement units. Their personnel is competent to assist you in every service problem.

Keep this fact in mind. Webster Electric Fuel Units PLUS Webster Electric Transformers on the oil burners you sell mean better service for your customers . . . more profits for you through decreased service demands.

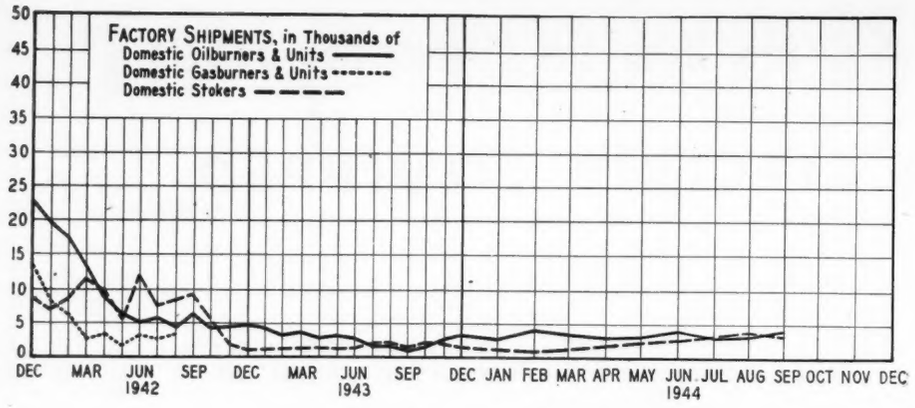
Let's All Back the Attack
BUY EXTRA WAR BONDS

WEBSTER ELECTRIC COMPANY, Racine, Wisconsin, U. S. A., Established 1909. Export Dept.: 13 E. 40th St., New York (16), N. Y. Cable Address: "ARLAB" New York City

WEBSTER ELECTRIC

"Where Quality is a Responsibility and Fair Dealing an Obligation"

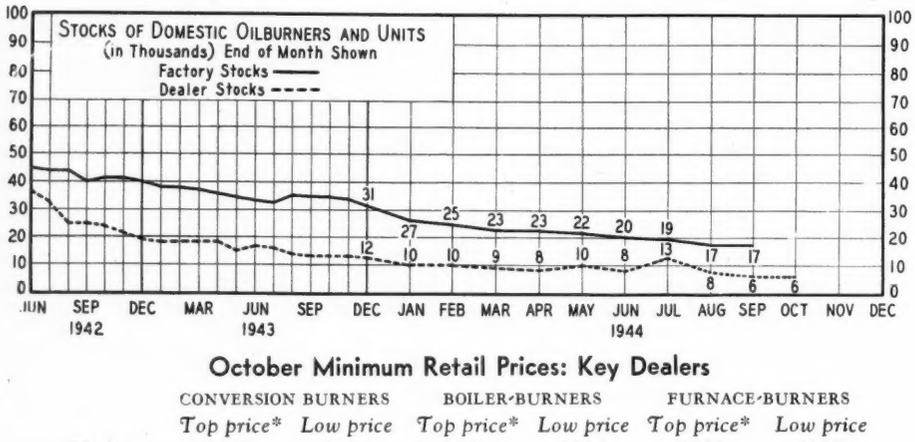
fuel oil & oil heat


FACTORY SHIPMENTS, in Thousands of
Domestic Oilburners & Units
Domestic Gasburners & Units
Domestic Stokers
DEC MAR JUN SEP DEC MAR JUN SEP DEC JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC
1942
1943
1944

Shipments of Oilburners and Units

Adjusted to include manufacturers other than the 85 reporting to Census Bureau, FUELOIL & OIL HEAT's estimates of shipments are:

	SEPTEMBER			NINE MONTHS		
	1944	*1943*	*Percent Change*	*1944*	*1943*	*Percent Change*
Conversion	2,916	693	+321.6	23,794	12,652	+88.2
Boiler units	547	166	+229.2	3,846	5,870	—34.5
Furnace units	614	176	+248.9	3,055	4,779	—36.1
All domestic	4,077	1,035	+294.1	30,695	23,301	+31.7
Commercial	2,716	3,641	— 25.4	24,184	35,385	—31.7
Total	6,793	4,676	+ 45.2	54,879	58,686	— 6.5


STOCKS OF DOMESTIC OILBURNERS AND UNITS
(in Thousands) End of Month Shown
Factory Stocks
Dealer Stocks
JUN SEP DEC MAR JUN SEP DEC JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC
1942
1943
1944

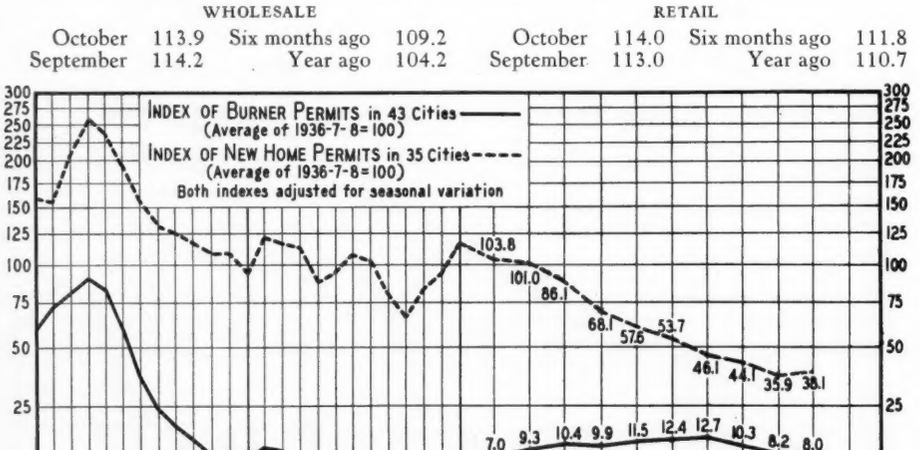
October Minimum Retail Prices: Key Dealers

	CONVERSION BURNERS		BOILER-BURNERS		FURNACE-BURNERS	
	*Top price**	*Low price*	*Top price**	*Low price*	*Top price**	*Low price*
Highest	$345	$195	$575	$396	$500	$395
Lowest	215	165	400	325	400	325
Oct. Aver.	266	182	473	363	447	363
Sept. Aver.	262	179	488	368	460	360

*Top price key dealers for conversion burners are those whose minimum retail prices are $200 or more, for boiler-burner and furnace-burner units (exclusive of ductwork) those whose minimums are $400 or over.

Price Index: Conversion Burners: January 1940 is 100%

WHOLESALE				RETAIL			
October	113.9	Six months ago	109.2	October	114.0	Six months ago	111.8
September	114.2	Year ago	104.2	September	113.0	Year ago	110.7


INDEX OF BURNER PERMITS in 43 Cities
(Average of 1936-7-8=100)
INDEX OF NEW HOME PERMITS in 35 Cities
(Average of 1936-7-8=100)
Both indexes adjusted for seasonal variation
DEC MAR JUN SEP DEC MAR JUN SEP DEC JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC
1942
1943
1944

Oilheating Trends

OCTOBER INSTALLATIONS of domestic oilburners and units are estimated at 6,385, or more than five times the 1,248 for the same month in 1943. This compares with 3,683 in September and 2,991 in August. Totals for ten months are 36,066 this year and 6,479 last year. October sales by types of equipment were 77% conversion burners, 12% boiler-burner units and 11% furnace-burner units.

BURNER STOCKS: Dealer stocks of domestic conversion burners and units at the end of October were about 6,100, nearly the same as September and probably near the irreducible minimum. Factory stocks at the end of September, the latest available data, were 16,711. At the start of September they were 16,985. Shipments during the month were 4,077, indicating new production of 3,803.

BURNER PRICES: Wholesale prices of conversion burners on the index dropped slightly in October, while retail conversion burners were up a full point. The price tables show that boiler and furnace units in general sold lower than the previous month. Dealers have no trouble getting these integral units, in contrast to their experience with conversion burners.

SERVICE INCOME: Up 20.6% from a year ago, reporting dealers had October service department income averaging $3,186, against $2,641 for the same group in 1943. Burner replacements billed through service departments would easily account for the increase. September service income averaged $2,958 and August $2,998.

RECONVERSIONS: Now that domestic and small commercial heating users, up to 10,000 gallons annual consumption, have been authorized to go back to oil after converting to coal, dealers believe that 34.5% of them will reconvert right away, and that most of the others will come back next summer. On the other type of reconversions, (those users of residual oil up to 126,000 gallons that P.A.W. is permitting to go back) dealers are less optimistic, expecting only 22.8% to reconvert this season. High price of residual oil is retarding this, with economics rather than convenience the determining factor. On both types of reconversion, New England dealers are much more confident than those in other

areas. By regions, dealers expect the following percentages of those who converted to reconvert as fast as possible.

	Distillate	*Residual*
New England	49%	57%
Middle Atlantic	43	18
Middle West	20	9
Weighted Average	35	23

Coal in the bin is causing some households to put off reconversion until next season. Some of the dealers, alert to this, are offering to take this coal off their hands if they will reconvert now. Averaging all sections of the country, 27% of reporting dealers say they are willing to buy this coal and remove it; the remaining 73% will not. Chances are, however, that most anyone wanting to reconvert could hint to his neighbors that there was some spare coal around, and it wouldn't have to lie there long. Solid Fuels Administration is aware of this and has shown concern over letting this coal get out from under control.

CONTRACTS FOR OIL: Since P.A.W. last month removed restrictions on taking oil contracts, dealers have been keeping an ear to the ground to learn if competitors are going to start it this season. In general, they don't want to do it, but may have to if enough competitors start. Country-wide, 14.7% of reporting dealers say they will try for contracts this season, or about one in seven. But in the Middle Atlantic area 25% say they want contracts now; one-third of those will ask present customers for contracts; two-thirds of the 25% will ask contracts from new customers. In the Midwest 14% of dealers will try for contracts now. In New England and the Pacific Northwest none of those reporting want contracts before next season.

CORROSION: A number of dealers have been complaining of increasing corrosion, shown particularly by oil tanks and pressure regulating valves needing replacement, so the reporting dealers were asked this month for their experience. Not many of them had much to say about tanks, the general impression being that they are replacing more of these simply because of the upsurge in burner sales eight to ten years ago. But on pressure regulating valves an important percentage of dealers say that they are having to replace an unusual number of these, believing that something in the oil is attacking the copper and brass.

Oilburner* and Building Permits

	OILBURNERS				DWELLINGS			
	October		10 MONTHS		*October*		10 MONTHS	
	1944	*1943*	*1944*	*1943*	*1944*	*1943*	*1944*	*1943*
Baltimore, Maryland	..	..	..	..	0	480	..	1040
Binghamton, New York	..	..	..	..	0	0	1	0
Boston, Massachusetts	68	28	..	..	0	0	0	22
Bridgeport, Conn.	21	8	105	11	..	..	..	..
Des Moines, Iowa	..	..	..	..	1	0	..	10
Detroit, Michigan	30	0	..	0	69	640	..	4127
Elizabeth, N. J.	4	3	..	6	..	..	..	..
Freeport, New York	3	1	..	5	..	..	..	..
Greenwich, Conn.	..	..	..	..	0	0	..	3
Hackensack, N. J.	..	..	..	..	0	0	..	0
Irvington, N. J.	6	0	10	1	0	2	8	13
Lynn, Massachusetts	..	..	..	..	0	1	..	1
Milwaukee, Wisc.	8	0	..	6	46	119	..	324
Minneapolis, Minn.	39	16	..	78	22	0	64	2
Morristown, N. J.	..	..	..	..	0	0	0	0
Mt. Vernon, New York	10	0	83	6	..	..	..	..
New Bedford, Mass.	27	4	120	31	..	..	..	..
New Haven, Conn.	15	2	27	4	..	..	..	..
New Orleans, La.	1	0	3	6	..	..	..	..
New Rochelle, N. Y.	4	0	..	0	0	0	1	0
Manhattan, Bronx, Rchd	24	5	..	49	..	..	..	..
Norfolk, Virginia	2	1	..	151	..	..	..	..
Omaha, Nebraska	12	12	..	36	11	28	347	45
Orange, New Jersey	1	0	1	1	0	0	0	2
Passaic, New Jersey	7	2	..	3	..	..	..	..
Paterson, N. J.	18	3	41	8	0	0	2	32
Plainfield, N. J.	..	..	..	..	0	0	7	18
Portland, Maine	7	1	22	5	1	9	3	58
Portland, Oregon	31	8	131	54	14	39	..	1428
Providence, R. I.	13	0	..	1	0	0	1	0
Richmond, Virginia	0	0	0	1	3	0	194	33
Rochester, N. Y.	0	0	0	5	..	..	..	..
Rockville Center, N. Y.	2	2	29	7	0	1	0	1
Salem, Massachusetts	2	1	7	1	0	0	..	0
St. Louis, Missouri	10	6	..	49	0	0	0	39
St. Paul, Minnesota	35	0	..	7	29	0	55	4
Schenectady, N. Y.	2	0	..	18	..	..	..	..
Seattle, Washington	..	..	..	..	158	129	628	1246
Springfield, Mass.	..	..	..	..	1	7	14	270
Stamford, Conn.	7	1	..	2	..	..	..	..
Syracuse, New York	..	..	..	..	0	0	21	51
Trenton, New Jersey	..	..	..	..	0	37	8	140
Utica, New York	..	..	..	..	0	0	30	0
Washington, D. C.	19	9	..	35	..	..	..	..
West Orange, N. J.	..	..	..	..	0	0	0	0
White Plains, N. Y.	10	9	..	23	0	0	0	0
Wilmington, Delaware	6	0	19	3	0	16	10	512
Worcester, Mass.	22	9	130	22	..	..	..	..
Yonkers, New York	14	5	76	17	..	..	..	..
Totals	480	136	804	183	355	506	1394	2488
Percent Change	+252.3		+393.8		—29.8		—44.0	

*Permits are not total sales in each market since none are reported from suburban areas, which normally account for 20% to 60% of total sales in each market; nor are they an accurate index where enforcement is lax. Rightly used, however, they are a useful working index.

On the returns from this study, the difficulty in the Midwest seems negligible, although previously two or three dealers had reported trouble. In other regions, however, the percentage of dealers reporting serious trouble are: New England 38%; Middle Atlantic 54%; Pacific Northwest 50%. At least one major oil company is conducting laboratory tests to try and learn the cause.

Typical dealer comments on this subject are . . . "Our guess as to the cause is higher sulphur content in the oil" . . . "50% more repairs; water, sulphur and asphalt in the oil; pump repair companies will not guarantee repaired pumps for one day" . . . "Nearly double previous trouble calls and parts replacement" . . . "We started noticing it last season, particularly on regulating valves" . . . "Have had a surprising number of regulating valves go bad; attribute this to inferior oil" . . . "Some new condition in the oil, sediment or some abrasive agent?" . . . "We are rebuilding valves by the dozen—it is serious" . . . "Service on pumps has increased 50%."

STOKERS: September shipments of Classes 1 and 2 domestic and small commercial stokers were: bituminous 2,976; anthracite 304; total 3,280. In the same month a year ago bituminous stoker shipments were 1,292; anthracite 381; total 1,673. This shows a 96% increase this year. Totals for nine months were 20,893, up 54.2% from 1,543 a year ago.

AUTOMATIC FUEL CONSERVATION

with

White-Rodgers Controls

Help your customers to prepare for winter. Relieve the present fuel shortage before severe weather sets in. You can do it by performing the following services in your area at the earliest possible date:

1.

STOP OVERHEATING — Install thermostatic control equipment and maintain the building at the proper temperature.

2.

STOP FIRE OVER-RUNNING—Install limit controls to prevent furnace temperature from exceeding an efficient limit before the room thermostat is satisfied.

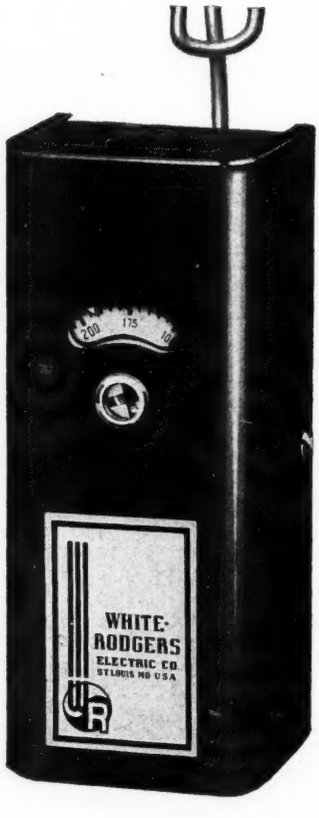
3.

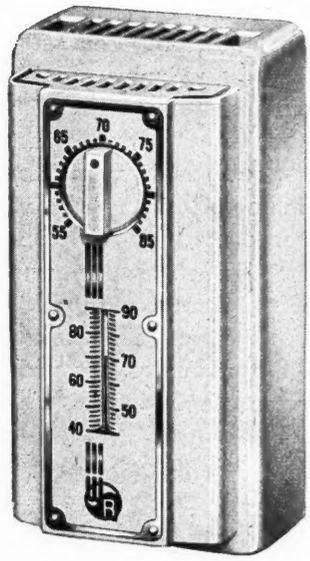
STOP HEAT LOSS UP THE STACK—Use draft controls.

4.

STOP HEAT LOSS THROUGH WINDOWS, DOORS, WALLS AND CEILINGS — Recommend installation of storm sash, weatherstripping and insulation.

White-Rodgers controls are available to back up the government's fuel conservation program. Early receipt of your requirements will enable us to arrange suitable deliveries.





White-Rodgers Series 130 Low Voltage Room Thermostats offer the advantages of an unbreakable steel case, positive snap-acting contacts and an improved element design including heat anticipation.

Complete protection against excessive temperatures is assured for the heating plant equipped with these White-Rodgers Safety Limit Controls. Freedom from operating temperature drift plus easily set cut-in and cut-out indicators permit the permanent setting of these controls to fit each installation.

Fuel-Saving Starts With CONTROL

WHITE-RODGERS ELECTRIC CO.

1299M Cass Avenue — St. Louis, Mo.

Controls for Heating • Refrigeration • Air-Conditioning

Dollars for Footwork

Salesmen Can Be Compensated for Honest Effort

by
A. E. Coburn

High in the list of problems confronting every salesmanager are two considerations: How to be sure his salesmen are doing a full day's work every day, and how to pay them for the effort they put forth until they start to collect commissions. Every successful salesmanager has solved these problems to some degree, but every solution is not applicable to all other organizations. Advances to salesmen on the basis of the honest legwork they perform in the interest of the company seems to be a fair and just method of supplying eating-money. It not only is good theory, but it works for Schmidlin Brothers.

DRAWING accounts have ruined more potentially good salesmen than any other single practice. As a contributor to the failure of salesmen, the drawing account outstrips the evil of financial anxiety which it was designed to correct, and rates far above the third mental sales hazard—the squabble with Momma over the breakfast eggs about the wires on Junior's teeth.

These are the sincere beliefs of Dan Schmidlin, who in company with his brother, Carl, operates Schmidlin Brothers Heating Company, the largest single factor in the conversion of Toledo, Ohio, from an exclusively gas market into a middling good oilheating town. It is his contention that competing fuels are a relatively minor obstacle to oilheating sales. The chief requisites to success are a thorough and unshakable belief in your product and service to the public, and a sales plan that will tell your prospects about your convictions. It's as simple as that!

A third requisite that might be suggested is a stem-winding, self-starting, hell-bent-for-sales manager like Dan Schmidlin, who believes that the country's greatest need is a 30-hour day so everybody can make more sales and have more fun. Sales are his vocation and avocation. He is convinced that the public can be sold anything that has merit. The only problem is to tell the people about it.

Waiting List

Telling people about your products in sufficient numbers to build a successful business requires help, so the company normally keeps eight salesmen busy, and usually has a waiting list of men who are anxious to get on the force. The number of men employed at any one time is limited to the number that can be kept earning at a relatively high level. The city has less than 300,000 population and 90,000 one- and two-family houses.

Schmidlin Bros. pays a straight ten per cent commission on sales, and a salesman is expected to make close to $5,000 a year for himself for the company to be thoroughly satisfied with his work. The yearly earnings of the satisfactory salesman is the reason for the waiting list, but Dan Schmidlin is quick to warn that the job is no place for a lazy man to spend his time. It is his theory that the average salesman is among the highest paid employees any company has, considering the time he spends each day doing the actual work for which he is paid. Mechanics at $1.50 an hour would starve to death if they spent as little time at their real work as the average salesman. Increasing the average salesman's time in front of the prospect, Mr. Schmidlin reasons, will increase sales for the company and earnings for the man. Keeping his men constantly in front of prospective buyers is the crux of Schmidlin's success. There is no other formula; no magic words; no special prices; no unusual deals.

The company is willing to pay a man to appear before prospects if he doesn't sell a thing. The more prospects he works on, the greater his earnings at the end of the week. Any man who works will make a living, and he doesn't have to worry about the rent or the groceries, but the company has found that the man who works will make sales, barring a positive refusal to accept business. It is simply an application of the old gag that you have got to make calls if you want to make sales, and the more calls, the more sales. The problem always has been to drive the salesman to make the necessary calls, and the company has solved that by paying the men to make calls as well as make sales.

Dan Schmidlin

The new salesman for Schmidlin practically writes his own ticket. He can have as much as he is willing to earn. If the total of his requirements for food, rent, clothing and movies comes to $50 a week, he can have it without any question. This $50 weekly guarantee for him would require that he deliver to the company about six surveys, six sales presentations, and one demonstration every week. The best part of the deal is that so much conscientious work on the part of the sales-

man will net him nearer $80 a week than $50, but he is guaranteed the $50 for representing the company on thirteen actual appearances before prospects during the week. In normal times a man should close seven out of ten presentations, according to Mr. Schmidlin, and if he falls below half they know something is wrong and needs checking.

The company creates leads for the men. Through newspaper advertising and direct mail, and a constant canvass of the users' list a steady stream of suspects is uncovered for the men to work on. During the last two summers the company has "bombed" Toledo heavily with publicity on its smoke-bomb test of furnaces for leaks. This is a dramatic demonstration that shows leaks in furnaces that need plugging when feasible, and replacement when the furnace is beyond economical repair. This demonstration has uncovered a lot of business for the firm, but it is only one source of leads out of several. Three times during an hour interview with Dan Schmidlin the telephone delivered requests for service and advice on heating problems. Each inquiry is transferred to a book for requests, the original of which goes to a salesman, and the carbon remains in the book as a permanent record, showing the date, time, the complaint or trouble to be fixed, and the salesman to whom the slip was issued.

First step toward every sale is a survey. This provides all the essential data on which to base an estimate of the work required. It shows the location of grilles or radiators, the size and location of the lines to them, the general layout of the house and heating system, size, make and condition of the furnace or boiler, and the work that needs to be done. This survey is filed as a permanent record of the heating installation, and can be referred to at any time in the future that there is a question about the heating system.

Schmidlin Brothers *showroom and officials*

The most immediate use for the survey is to serve as a basis for an estimate on the job. When the specifications and the proposal are finished the salesman takes this material (bound in attractive paper covers) and makes his presentation. It is on this call that the salesman first attempts to close the sale. Survey calls are for the purpose of gathering information and getting acquainted with the customer, but when he has the proposal in hand he tries for the sale.

Bread-and-butter money is paid salesmen for making these calls. Depending on the product being sold, a man is paid from $3 to $8 per survey call. Presentations bring $2 to $5, and demonstrations are worth $1.50 to $3 to the company.

Salesmen are not left entirely on their own on their surveys and presentations. The company, which has spent its money to develop the leads, has a prime interest in the action taken on each case, and follows through with the salesman. If surveys are not complete the man is sent back to get the required information. This has the added effect of impressing the prospect with the thoroughness of the consideration he is getting from the company. Then the office follows up with a letter thanking the prospect for the opportunity to survey his heating installation, makes general suggestions for its improvement, and asks for an appointment at which the details of the specifications and the proposal can be presented by the salesman. If there has been any slip-up, or if a man's imagination has entered into the survey, the fact usually will appear as a result of the follow-up from the office.

Proposals carry the specifications of the work to be done, and the price for the job. This estimating all is done at the office, and constitutes the final price for the work proposed. Salesmen are not permitted to vary the price for their own convenience, except at their own expense.

Firm Prices

"Occasionally a salesman will get impatient to close a sale," Mr. Schmidlin explains. "Perhaps it is getting well along toward supper time, and he has promised to take Momma to the movies that evening. The customer is slow to accept the $528 price in the proposal. There always is the temptation to allow the prospect $28 for his old furnace in the interest of speeding the sale. When the salesman makes such an allowance, he has bought himself a second-hand furnace, and he can do anything with it he likes. The firm's price still is $528 for the job, arrived at by a careful analysis of the requirements and the costs. We have no special deals, and no salesman is empowered to make a special price."

Advantages inherent in having a close check on the requirements and the price quoted on every job are obvious to any dealer who sells equipment. "Time was," Mr. Schmidlin explains, "when friends would jump me at lodge or after church about the bid we had submitted on their work. Without the facts on the particular

job they can convince you that you are a robber, but if you know that the price includes changing and resizing the basement duct system, supplying a cold air intake, and installing a draft regulator, you can sell them the job instead of taking a tongue-lashing for your outrageous price for 'replacing the furnace.' We believe our prices are fair and just for the work we propose, and with justice on our side, we can sell hard without qualms about the value we are delivering."

Salesmen create plenty of leads for themselves besides those the firm gets through its advertising and promotion. A man who is making surveys in a neighborhood will call on the neighbors of his prospects and ask permission to survey their heating plants while he is there. Few plants are so perfect that there is no work that should be done on them. Any cast-iron furnace more than three years old will need to be re-cemented, smokepipes need to be replaced, and adjustments need to be made. The men make the surveys, get specification and proposal sheets made up, and go back to sell the required repairs.

Wide Equipment Lines

Schmidlin Brothers sell Gar Wood oilfired equipment, Winkler stokers, Capitol rockwool insulation and a complete line of gas and coalfired equipment. They formerly had a good oil business, but sold it last Spring to a major oil company. Their interest is in equipment sales regardless of the fuel the equipment uses, though the chief interest is in the oilfired line. They believe in the satisfaction and the economy offered by oilheating, and have sold slightly less than 2,000 oilfired installations in the seven prewar years. The company is servicing about 1,500 other installations in the metropolitan area.

"We have hired and trained 82 salesmen in the 28 years we have been in business," says Dan Schmidlin. "We expect to train many more in addition to those who will return to us from the armed services and from their war work. I believe our troubles are over as far as salesmen are concerned, and there is little reason why other dealers cannot solve their sales problems in a similar way.

"By paying salesmen their advances on the basis of the actual work they do, we have eliminated any cause for financial worry on the part of any man who works. If he won't work, there is no more reason to support him as a 'salesman' than by any other title. We are willing to make advances to the man for work done because we know he is sure to make sales if he exposes himself to business in an intelligent manner.

"I receive a daily report from each man every morning. I know exactly where he has been the day before and what he has said. I know where he is going and what he is supposed to say that day. If he does what he is supposed to do, he will make money—and so will we. If he fails to do his work we will know about it before too long. Any man who works will make money for himself and his company. Our whole sales program is designed to encourage a man to work."

Another War Oilheating Task

Described in the November issue were six special oilheating products developed for unusual war applications; others will be shown from time to time as manufacturers show willingness to release the information.

WHEN WE SEE MOVIES or still pictures of PT boats roaring through the water, and challenging with their few tons the mammoth enemy battleships, it doesn't occur to us that these boats represent, like any other carrier of men and munitions, a heating problem. The crew must be kept warm in cool climates and, regardless of where the ship operates, it must be supplied with "domestic" hot water.

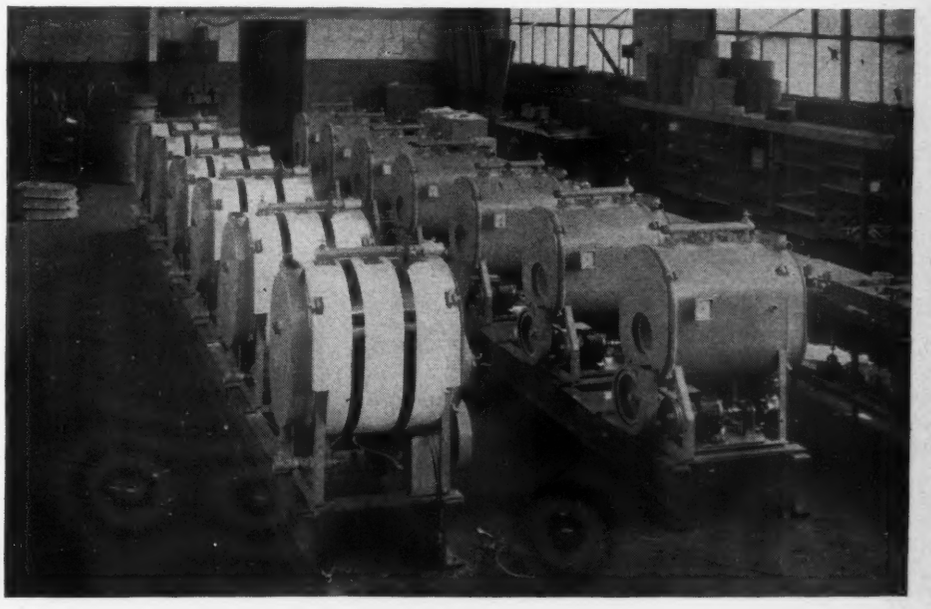
The problem of heating plant design was complicated by several unusual conditions. The unit had to fit into a space three feet long, three and one-half feet high and two and one-half feet wide. It had to be a hot water system and built entirely of steel or copper, to protect the crew in case the ship was hit; escaping steam or cast iron fragments could add considerable numbers to the casualties.

Moreover, the unit must be capable of operating properly when tilted to either side, or fore and aft, at an angle of 45 degrees from the horizontal. Such small boats pitch around, and turn very quickly.

The "Dynatherm" boiler of Bethlehem Foundry & Machine Co., Bethlehem, Pa., was redesigned and adapted to the job, and has been successfully installed, not only in PT boats, but also in PC boats, YMS minesweepers, YDT tugboats . . . all Navy craft, and the Higgins 170 foot Army cargo ships.

Thrush circulators are used to move the water to the finned-tube radiators in the crew's quarters and other spots where heat is needed. Controls are supplied by Penn Electric, their snap switches operating regardless of the angle to which the boats may tilt.

An unusual feature of the system is that the water circulation is reversed, the cold water being brought in at the top to take advantage of the "super-charger" effect of the boiler, reducing stack temperature. Capacity is 250,000 Btu's.



Sun, Wind and Btu's

Design Temperatures Will One Day Reflect All Weather Factors

by

Robert Gray

MOST EVERYONE AT ONE TIME or another has come out with the observation that war stimulates research and speeds the development of technological processes . . . true of course, but we often miss the real implication of this heightened tempo of brain exercise, or the fact that technicians are now being made aware of how comparatively little progress they were making before war came along.

When winning a war depends to a large extent on being able to outsmart one of the smartest nations on earth, Army-Navy scientists working with industry production men early realized that they must keep six jumps ahead of the enemy, and they have succeeded in doing the impossibles of short months ago . . . pinpoint bombing of invisible targets through thick clouds, fire control equipment that picks off enemy planes, tanks, even submarines, without anyone being near the gun that does the shooting . . . and these products machined to Swiss watch accuracy by lumberjacks with six weeks training.

So when a manufacturer, looking to peacetime products, says "You ain't seen nothin' yet," he isn't kidding, although he may have been too busy to get a single line on a drawing board for a postwar product. He is sure, though, that our country's awakened thinking power, when beamed to peacetime products, can produce miracles equal to war developments. And if he is a particularly large manufacturer, he is probably saying that products will be vastly improved, will sell for less, and be built with higher priced labor, to hold up purchasing power.

There is little reason to expect great change immediately after V-day . . . we must think rather in terms of one to two years later, allowing time to shift gears.

Here and there a manufacturer, while still running virtually 100% on war work, has already started in the laboratory to solve some of yesterday's impossibles. The author, talking recently in Chicago to an official of Minneapolis-Honeywell Regulator Co., was told of a particularly ambitious research project that the Company had launched in the hope of being able to calculate the effect of sun and wind, in addition to temperature, in the design and installation of automatic heating equipment.

Before the war such a project would have probably been dismissed as impractical or inconsequential, but not so today, for close refinement has become the new order.

Permission was arranged for access to the laboratory and its findings to date, and the possibilities and objectives became readily apparent.

The Company feels that postwar heating plants can be geared to exact heating needs much more accurately, and as a result more efficiently, than in the past. As explained by H. F. Dever, Vice-Pres. in charge of research and engineering, and V. L. Beam, chief engineer, the Company has felt that the absence of accurate knowledge of climatic effects in any particular area has led to generally over-sizing heating plants with resulting loss of accurate operation and fuel economy.

Equipment Too Large

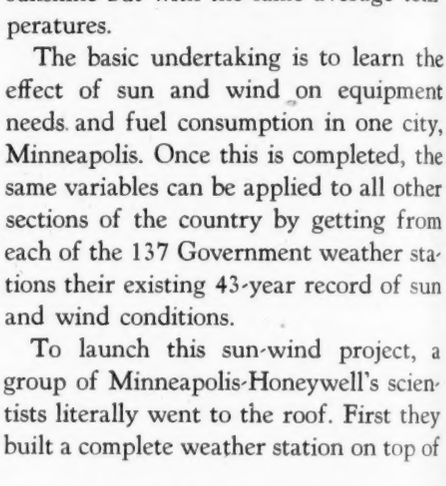
In common practice, when the heat loss of a home has been calculated, often by rule of thumb, each item of equipment has been installed too large, in order to play safe on the various unknown influences. For example, moderately over-sizing a boiler, then the radiators and then the burner firing-rate, can add up to a considerable overage that provides a sluggish system.

The Company ambitiously hopes to devise factors to take the place of present "design temperatures," these new factors to show in simple tables the capacity of heating equipment needed for a given load in each principal weather area, with the new factors giving proper weight to prevailing sun and wind conditions in addition to prevailing temperatures.

While the research job is far from complete and may take another year or two to finish, enough has already been learned to point up the real need for the study. Cities in the plains section of the country have several times as much wind as cities farther east in the same degree-day belt, and wind raises fuel demand. Sun heat has, naturally, the opposite effect, so towns with much sunshine can use smaller heating plants than other places with less sunshine but with the same average temperatures.

The basic undertaking is to learn the effect of sun and wind on equipment needs and fuel consumption in one city, Minneapolis. Once this is completed, the same variables can be applied to all other sections of the country by getting from each of the 137 Government weather stations their existing 43-year record of sun and wind conditions.

To launch this sun-wind project, a group of Minneapolis-Honeywell's scientists literally went to the roof. First they built a complete weather station on top of



an elevator shaft of the main building. This gives them temperatures, precipitation, wind direction and velocity.

Next, the Company built a miniature house on the elevator shaft and in this placed an electric heating unit and dozens of thermocouples throughout the walls and roof. Electric heating was used because exact fuel consumption can be readily translated, hour by hour, to remote recording instruments.

Third, the Company built on the main roof a two-story cottage; its first floor is filled with a variety of heating plants . . . steam, hot water, warm air, oilfired, gas-fired, stoker fired . . . and the second floor contains one large room in which heating results are observed from the heating plants below, and two small rooms lined with scientific instruments and recorders that constantly show what is happening in the three roof-top structures. Walls, ceilings, roof, floors and mid-air spaces are again filled with thermocouples so that the needed variety of conditions can be known and recorded.

Down to the control room from the miniature house come not only the fuel consumption in watts, but also the Btu's per square foot of sun heat being absorbed through roof and walls and the Btu's of heat loss from the walls on the windward and lee sides of the structure.

After nearly a year of study, carefully watching and recording data, the Company's executives and technicians are anything but boastful about results to date, but confident that they will eventually get what they're after. Many of the observations just don't make sense until they have been tried literally thousands of times . . . then a pattern starts to emerge.

Both wind and sun are temperamental —often resist giving up their secrets. Coquettish, wind will sometimes drop fuel consumption instead of raising it, while full sunshine will sometimes raise the heating demand. Wind effect varies with the angle at which it strikes the walls; the same with sunshine. Wind effect in percentage of fuel need is not constant at different outdoor temperatures. While the maximum sun heat absorbed occurs at 12 noon, maximum outdoor temperatures occur at 4 P.M.

On days with both sun and wind, how can their effects be separated? Selecting at random two cases from the thousands that have been recorded, here are two hourly recordings, both with outdoor temperatures of 30°:

Wind Velocity	*Sun Heat Btu's/sq.ft.*	*Watts Consumed*
13.8	347	64.0
10.2	142	72.3

It will be seen that the drop in sun heat in the second example more than offset the decline in wind velocity, resulting in a 12% rise in fuel consumption. But sun heat can make a much greater impression

Rooftop *laboratory bungalow and one wall of control room.*

than in the examples shown; it runs as high as 2,000 Btu's per hour per square foot and as low as 100.

As explained, it will be months before the Company is sure enough of its ground to release officially any formulas or work sheets. But a few impressions from the work to date are being discussed by the men engaged in it. The effect of full sunshine on fuel saving just about offsets the added fuel losses caused by a 15 mile wind. During the night when there is no sunshine, doubling the wind velocity will slightly more than double fuel consumption. A 30-mile wind can cause heat loss from the building five times that of no wind, temperatures being equal. On a zero day the mid-afternoon temperature on the outside of a west wall in full sunlight has registered 140°.

The Company had not thought of the new over-all weather determinations as an adjunct to the degree-day system of automatic fuel deliveries, principally because it would be quite a chore to make daily adjustments to degree-days for sun and wind effect; rather, the objective is limited to facilitating the installation of more accurate and efficient heating plants. But once the sun and wind figures are published, some fuel delivery operators may find ways to use them.

Large Terminal Stocks Create Dangerous Impression Of Plenty

In a front page *New York Times* article at mid-November a reporter, quoting "reliable industry spokesmen" said that heating oil supplies are now so plentiful that consumers could reasonably expect a rise in coupon values before long. He pointed out that heating oil stocks in the East and Midwest were much higher than a year ago, and mentioned the fact that domestic reconversions are now being allowed as proof that the stringency is past. While PAW countered with a statement the next day pointing out that the reporter had been misinformed, yet many oil men have believed that it's about time to take the lid off and let 'em have it.

If PAW knows whereof it speaks, and past experience has shown that it frequently does, the heating oil supply program from now to March 31 is barely ample to support par value coupons. Piling up stocks at terminals in the early part of the season has been done as a matter of military expediency, to get that much of the civilian needs put by in anticipation of probable heavy winter war demands. It must be recognized that starting this summer we got into a real shootin' war, with supply needs much greater than they had been previously. Not only in Europe, but also in the Pacific things are moving faster, and at any moment the commanders in those areas may see a fresh opportunity for a successful big push in some new direction, but the opportunity would be lost if they couldn't demand and get large additional oil supplies.

Those oil supplies cannot be stored in the war areas in quantities great enough to meet every eventuality; there isn't that much storage, and also big oil depots are much too inviting to enemy bombers. So the war must be served largely by supplies that keep coming.

To some realists the East Coast supply situation appears precarious rather than serene. A year ago the area was getting 800,000 barrels a day by tank car; this has now been reduced to 500,000 and the released tank cars switched to the Pacific service. Another 700,000 barrels daily move into the area by pipeline, but about 500,000 comes in by tanker and barge, and it is in this third category that hazard is recognized. Almost any day the changing programs of war might call for those tankers to be removed from their present job and hustled to India or Formosa or Denmark. Then, however abundant East Coast stocks, they would yet be seriously inadequate for civilian needs.

It must also be recalled that military products utilize a large part of the present transportation capacity, and that tank cars are also subject to changing military programs.

World Program Controls

There is another angle to domestic oil supplies that has been given very little, if any, publicity, yet has an important bearing on how much heating oil we get. Starting just a year ago, supply and demand programs were shifted from a United States basis to a United Nations basis. Three times since then representatives of these nations have congregated either in Washington or London and mapped the distribution of petroleum products to best facilitate the world effort. Thus, if our country should produce an unexpected surplus, it would not be ours to consume until the United Nations group had decided that it could not be used to better advantage somewhere else. The amount now given us for domestic heating is a specific figure agreed upon by the pool. To raise coupon values by as much as one point would require an extra nine million barrels. When, and if, we get that much surplus we still can't start burning it until we get green lights from several corners of the globe.

Various liberalizing steps have almost removed rationing restrictions from residual oil, because the pool members agreed that there is a world surplus, due to stepping up refinery runs to make enough light products. War has little use for heavy, or low gravity, residuals. Ships operate on "Navy Special," a blend of light residual and distillate oils, because heavy residuals make too much smoke. This pinches distillate supply. Distillates are also used at the other end of the scale for blending with kerosene to make 7-0-2 Diesel oil, so the war squeezes domestic heating oil from both ends.

With distillate supply for heating frozen at par coupon values, why was it possible to allow domestic reconversions to oil and also to permit the use of distillate oil for coal spraying, after both had been prohibited for two years? Simply because each involved a relatively small quantity of oil and because each relieved a big industry headache.

Industry Headaches

The headache eased by allowing domestic reconversions needs no explanation to oilheating men; the amount of oil involved, asuming that half of those who had converted to coal go back to oil this season, is one and one-half million barrels. From the reports disclosed in the "Trends" section of this issue, it appears that only about a third will go back this year, so the oil involved is only about a million barrels.

Coal spraying is less understood. Before oil became scarce the coal industry used distillate for spraying coal, principally at the mines. This was done to prevent slack and small sizes blowing off the railroad cars in transit and, probably more important, to prevent small sizes from freezing in the cars due to rain or snow. Unsprayed coal sometimes froze solid in the lower half of a car, making it virtually impossible to unload through the bottom dump mechanism, and labor was a bit scarce to hack it out from the top with pick and shovel.

At first the use of oil for coal spraying was entirely prohibited, and the coal men screamed long and loudly. Then they were told that they could use residual oil for the purpose. This did not help much because mines did not have preheating apparatus to handle the residual, and even if they installed such equipment they soon found that the oil congealed in transit and the coal became almost as hard to unload from the dump bottoms as if it had been frozen.

Naturally, the clamor to PAW from coal men to give them distillate oil persisted, and now this has been done. The total amount of oil involved is 1,095,000 barrels.

Thus, the two liberalizing programs represent a total increased distillate demand for between two and two and one-half million barrels a year, compared with

nine million that would be needed to raise coupon values one point. But to get the added two and one-half million it was necessary to revise the American demand program upward by that amount at the time the United Nations group met in Washington in early October.

Looking ahead, coupon values may go up or down, depending more upon how the war progresses than upon how much oil we produce in this country. If the war goes on at about its present pace, par coupon values are indicated through the season. If the European phase should end suddenly coupons could apparently be raised within a month. But if, on the other hand, we should have important military successes in any part of the world that would lead the commanders to put on more steam and plunge ahead at increased tempo, they would probably call for our present civilian supply tankers, and coupon values would have to drop sharply. Speculatively, there is as much chance to encounter eight gallon coupons this winter as twelve.

Understanding this, it is short-sighted for oil men or newspapers to encourage people to be more comfortable in anticipation of higher coupon values later. It is going to be hard to overcome the harm already done, but it's worth trying. Oilheating consumers have cooperated magnificently with short rations through two winters. Naturally, they haven't liked it; nerves are a little frayed through constant vigilance. So when an oil man says that happy days are just around the corner, customers love it (and him). But after that, another let-down could make them pretty unhappy about everything connected with oilheating. It's much safer to keep them informed that oil is still scarce.

Space Heater Sales Expected To Increase 60% Postwar

OILFIRED SPACE HEATER sales are expected to increase rapidly as soon as restrictions are lifted and oil and materials again become available. The increase in space heater business in the five years from 1946 to 1950, inclusive, is expected to be at least 60% above the five prewar years when 2,232,000 units were sold. The meagre allotments of war materials to make replacement units during the last three years have only partly been supplied to manufacturers, and rationing controls have sharply curbed replacement sales. It is estimated that replacement sales alone will amount to a million oilfired units before the end of 1950, and the well-built, small home with a low heat loss will be an ideal market for new oilfired heaters.

Steady Climb Prewar

Sales of flue-connected oilburning space heaters (contrasted with the portable wick-type oil stove) reached an all-time high volume in 1941, in spite of the first oil shortage scare which occurred in that year. Sales volume in the five prewar years was:

1937—426,230 1939—358,110
1938—356,000 1940—523,940
1941—567,640

Even a casual glance at these sales volume figures indicates that the oilfired space heater sales followed roughly the level of prosperity in the country. Comparison of the annual sales against spendable income—individual income less direct taxes—in the prewar years shows the effect of prosperity and oil shortage scares on space heater sales. In 1937, when people had 69-billion dollars to spend, the industry sold 426,230 space heaters, or 6,177 units for each billion of spendable income. In 1938, spendable income dropped more than 9% to 63-billion dollars, and the country bought only 5,651 oilfired space heaters per billion of income. Though 1939 was almost as good a year as 1937 from the standpoint of income, people still were cautious, and bought only 5,266 units per billion. The years 1940 and 1941 were war years and people were more confident of their ability to maintain their higher level of income, and in 1940 they bought 7,177 space heaters per billion of income. The tanker shortage along the Atlantic Coast and the attending publicity in 1941 shrunk the sales that year back to 6,451 space heaters per billion dollars of spendable income. In tabular form, the prewar record was:

Year	Billions of Income	Units per Billion
1937	$69	6,177
1938	63	5,651
1939	68	5,266
1940	73	7,177
1941	88	6,451

These figures tend to prove that people buy more oilfired space heaters per unit of income as the total income rises, providing there are no outside influences that frighten them away from the purchase.

Using the same estimates of postwar income that have been accepted in estimating the market for oilfired central heating—roughly the average of estimates made by four of our large manufacturing companies and the Bureau of Foreign and Domestic Commerce—it is possible to arrive at a postwar estimate of space heaters simply by assigning an estimated figure representing space heater sales per billion of income. Instead of using the 1940 factor of 7,177 units per billion of income, which may be conservative for the high level of income predicted after the war, calculations have been put on an even more conservative basis of an arithmetic average of the factors for the five prewar years, or 6,144 oilfired space heaters per billion of spendable income. This factor is even below the 1941 sales per billion when the industry was being opposed by government in its expansion. It is felt that the forecast of sales on that basis is the minimum that can be expected, rather than a hopeful estimate. By the simple process of multiplying the estimated spendable income for each postwar year by the 6,144 factor, we get:

Year	Billions of Income	Sales per Billion	Estimated Sales
1946	$116	6,144	713,000
1947	115	6,144	707,000
1948	119	6,144	731,000
1949	122	6,144	750,000
1950	123	6,144	756,000

If space heaters follow the pattern of the past, from 82% to 89% of the volume each year will be fired with pot-type burners and the remainder with perforated shell type burners. It is yet too early to estimate what the future trend may be in the type of burner to be used in space heating units.

It is assumed that the immediate postwar sales will follow the market pattern of the past with New England and Middle Atlantic states taking 45% of the oilfired space heaters; North Central states, 29%; Mountain and Pacific Coast states,

(Continued on page 81)

Perfex

INTRODUCES SEVEN CONTROLS AND INSTRUMENTS

for Apartments, Hotels, Office Buildings, Schools, Stores, Industrial Boilers, etc.

Hit-or-miss, uncontrolled combustion is today's greatest cause of fuel waste. Industrial and heating boilers that are not under proper control do not derive the maximum of useful heat from fuel burned, are incapable of maximum ratings, and add considerably to operating cost.

Now this waste can be corrected. You can achieve "big plant" fuel burning efficiency in the smaller steam generating plants that you design, install, service, or operate.

These new units pay for themselves within a short time, and — what is even more important — will continue to effect fuel savings year after year. Each control and instrument in this new Perfex series features new basic engineering advances. Every heating and power engineer, plant management executive, and building operator should investigate these controls now . . . to achieve maximum fuel economy.

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The ACTUATOR The heart of a control system is the moving device. The Perfex Actuator is a rugged, powerful positioning unit furnishing positive straight-line movement adjustable from 2" to 6". It exerts a draw-bar lift of 300 pounds. It responds to remote control from draft or combustion controls to operate dampers, lever valves, rheostats, blast gates, modulated stokers, and full automatic oil burners.

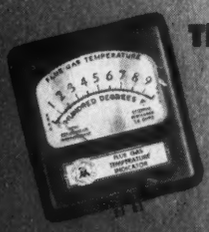
The DRAFT CONTROL Used with Perfex Actuator, regulates outlet damper in response to slight changes in over-fire draft. Its dry diaphragm and 115-volt snap-action switches operate on adjustable, slight differentials. Desired draft rate is maintained within total range of .02", operating on .01" variation from adjusted rate. May be used to operate any three-wire switching mechanism for controllers other than Perfex Actuator.

The COMBUSTION CONTROL Operates Perfex Actuator in response to slight steam pressure changes to control stoker or oil burner fuel and air feed or dampers. Step regulation features easy adjustment of step length. Incorporates secondary control circuit for "over-control" from weather, process, or time. Brings standard of performance formerly available only to large plants into popular price field.

The DAMPER PROGRAM CONTROL Provides low "stand-by" draft to effect enormous fuel saving during the "off" periods for "on-and-off" stokers and oil burners. Meets Underwriters' requirements by opening stack damper before automatic firing equipment starts, then returning regulation to the Perfex Draft Control when stoker or oil burner is in operation.

The DRAFT GAGE The first requirement in your campaign to increase efficiency, the most needed instrument in the boiler room, the Perfex Draft Gage is a single pointer, large scale, easy-to-read instrument for indicating over-fire draft or boiler outlet draft. It features a dry diaphragm and its simple and accurate mechanism assures accuracy and long life.

The PRESSURE GAGE An absolute "must" for efficient forced-draft solid fuel firing. The Perfex Pressure Gage accurately measures and indicates the pressure under the grate, and, therefore, indicates the condition of the fuel bed. Clinker formations and "blow-holes" are instantly detected through rising or falling pressure, enabling the operator to correct such conditions before serious fuel losses occur.



The FLUE GAS TEMPERATURE INDICATOR This much-needed instrument furnishes a final check on all phases of boiler operation by measuring and indicating temperature of the flue gases. Incorporates automatic compensation for ambient temperature, and, therefore, its constant indication is direct and accurate. Long connecting cables permit installation at point where instrument may be most easily read, thereby assisting operator. Instantly indicates heat losses caused by "sooting" and excessive draft.

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Electrical Test Benches

Simple Tests for Motors, Relays, and Transformers

by
J. W. Schulz

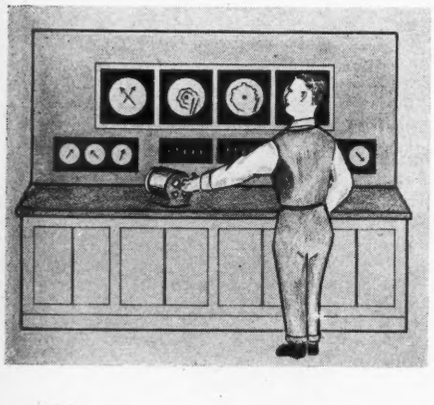
SERVICEMAN Joe brought a burner motor into the office the third day he was working for his new boss.

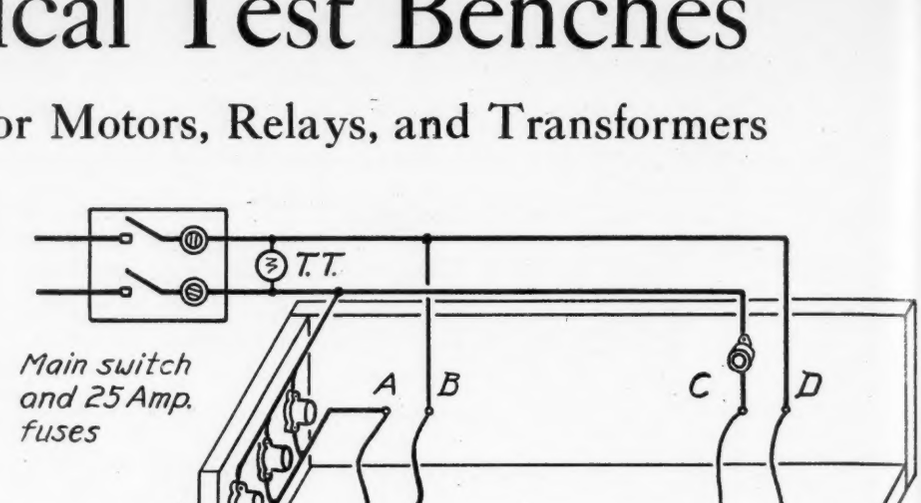
"I couldn't tell on the job if this starts perfectly every time or not," he reported. "It's a rebuilt motor which was put on the burner two months ago. What'll I do with it?"

"Take it to the test bench," ordered the boss, "and I'll show you how to use our special rig for finding out if it's healthy or not. If it proves okay, we'll put it in stock. If not, we'll send it out for repair."

Test benches are used by thousands of service experts to determine the condition of burner parts that have been brought in as questionable or defective. Not only must motors be shop-tested, but also ignition transformers, solenoid valves, thermostats, burner control panels, and electric clocks. Occasionally newly installed equipment must be brought back to the shop for thorough testing. In addition, testing is needed after shop repairs have been made to certain parts. For example, the motor fitted by a dealer with a new centrifugal switch may need a check-up for proper starting; the solenoid valve which was reconditioned and equipped with a new coil needs check-up for proper opening and closing; and a relay or control panel needs checking after its contacts are adjusted or replaced.

How much testing equipment a dealer needs depends on the size and complications of his service operations. If he services a few hundred pressure burners of only two or three makes, the simple test set-ups shown in Diags. 1 and 2 may fulfill his needs. If he owns a service organization which employs a few dozen men to take care of several thousand burners, of all types, sizes, and makes, he may find that to give best possible service he needs a testing set-up that resembles the control and instrument panels of a power plant!





Diag. 1— *Test bench like this one eliminates blowing fuses to detect electrical defects. Three 550-watt heater elements are screwed into lamp sockets. In parallel with each other, they are in series with the device being tested.*

The equipment shown in Diag. 1 takes little time and money to set up, but enables a serviceman to speed through certain elementary check-up steps. As you can definitely make good use of this much testing equipment even if you service only a few dozen burners, it is suggested that you follow this pattern and become acquainted with the elementary tests, if up to now you have not set up an electrical test bench. Feed the main switch shown in the diagram from its own set of fuses at the electric meter, and use No. 10 wire for this branch circuit. Locate the main switch within easy reach, for it should be kept open at all times when the test bench is not being used. A tattle-tale lamp, labelled T.T. is on the load side of the fuses and main switch to tell when the switch is on. This may be, for example, a blue or red 10-watt bulb. The use of fuses of lower rating at the test bench end of this circuit than at the supply end of it insures fuse blow-outs coming at the bench, where the fuses can be replaced conveniently and quickly. Blowing of a fuse puts out the tattle-tale lamp, of course.

You will not blow many fuses a year if you use this rig properly, however, for it has a double-safe, fuse-saving feature. The test clips connected to posts A and B are to be used for applying current to any motor or similar 110-volt device, even one which you suspect is in condition to blow a fuse. Here's the trick. You screw three 550-watt regular electric heater elements into the three lamp sockets shown on the lefthand side of the bench. (Check-ups show that these are still obtainable in many five-and-dime and hardware stores at 35¢ to 50¢ each. 600-watt elements serve as well as 550's.) Connected in

parallel with each other, these heater elements will give the A-B circuit enough current to permit testing of a 1/6 hp motor, for example. Still, if you connect clips A and B to each other, you simply will give 110-volts to the three heater elements and cause them to glow as they are designed to.

There are many possibilities to using clips A and B for testing a small motor of the type generally used on domestic oil burners. Here are a few.

1. If there is no spark at the clips when you connect them to the motor, and the heater elements do not glow at all, there is an open circuit in the motor. It does not take current. (Test further using a lamp in series with the motor.)

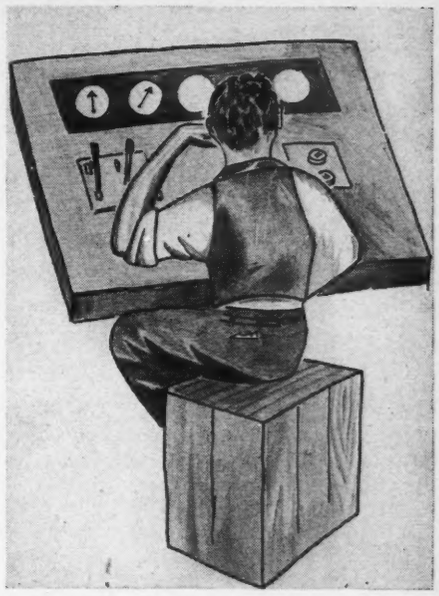
2. If the motor does not come up to speed and the heater elements glow at nearly their full intensity, for some reason the motor is drawing excessive current. The windings may be partly short-circuited. The centrifugal switch of a split-phase or capacitor-start motor may be failing to open as it should. If you can, apply the identical test to a motor of the same model which you know is in good order, and compare the results.

3. If connecting a motor across A and B causes the heater elements to glow at full intensity, the same as they glow when you connect the two clips directly together, there is a dead short in the motor. It would blow a fuse if you tried to use it.

The three sockets used for the heater elements must be a type that will stand a bit of heat from the elements, of course, and the base they are mounted on should be fireproof. The sockets are mounted within convenient reach, because, especially in testing motors, additional information can be gained by testing with one or two of the heater elements unscrewed. If you use the rig regularly you will soon learn just how your commonly encountered motors act when you test them with one, two, or three of the heater elements screwed in place.

The big advantage of using clips A and B for testing motors and other electrical devices suspected of being in poor condition, according to one serviceman who has been using this test layout for a few months now, is "that you can fool around all you like with 110-volts without blowing fuses by the dozens." To avoid shocks while doing your testing, connect up with the main switch open, stand only on dry wood and don't touch any grounded metal, or provide special insulation for the test clips.

Clips C and D feed through a single screw type socket which is mounted on the back of the test bench as the diagram indicates. Place a small lamp, 10 to 25 watts, in this socket and use it to find out if any current at all will pass through sick 110-volt motors, transformers, etc. Also, use C and D to test the operation of 110-volt switches and controls, and to find out if a 110-volt resistance element has an open circuit. Substituting a larger bulb in the C line, in place of the small one used regularly, gives a cue regarding the amount of current being drawn by certain equipment; the brighter the bulb lights, the more current is being drawn through it. It pays, whenever possible to compare the test results given by equipment known to be healthy with the results given by equipment suspected of being defective. Using the proper size bulb in series with a certain electrical device, you can learn to judge whether it draws about the right amount of current.

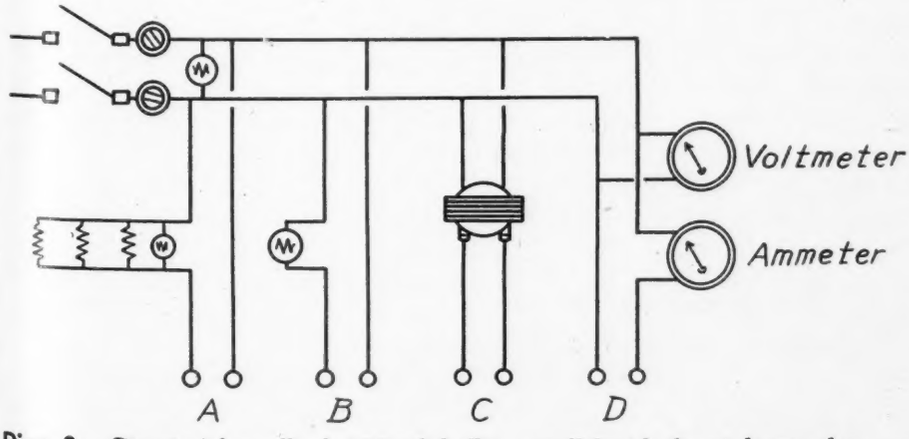


Clips C and D are used also to find out if the 110-volt windings of a motor or transformer are improperly connected to the case or "grounded." Connect clip D to the shell or case, and with a small bulb in the socket connect clip C first to one 110-volt terminal of the device being tested, then to the other. The bulb should not light.

Diag. 2 shows four circuits of a slightly more highly developed test bench. Notice that a tattle-tale lamp has been added to the circuit of the three heater elements in the line labelled A. This lamp, in parallel with the heater elements, will light at full intensity when circuit A is affected by a "dead short." The circuit labelled B is the same as the second circuit just covered for Diag. 1. If a dealer desires, he can provide a circuit identical to B, but provide a fuse in it in place of the small bulb used regularly in B. Circuit D, in Diag. 2, provides 20-volts from a small transformer for testing low-voltage solenoids, such as those in certain relays and valves, and for checking low-voltage clock movements.

The voltmeter and ammeter shown in circuit D are, of course, indispensable items in the full-fledged electrical test set-up. They are not easy to obtain today; dealers who haven't a set on hand and who find it impossible to buy suitable instruments may simply have to call circuit D the post-war feature of their bench.

A very helpful feature not shown in



Diag. 2— *Circuit A has tell-tale 110-volt bulb in parallel with electric heater elements. A "dead short" causes this bulb to light. When heater elements are hard to get, similar resistances from electric irons or toasters can be used when properly mounted.*

the diagrams is a Series 10 simple relay for the test bench. This can be wired permanently to a source of 110-volts, and also to an indicator light that will go on when the relay snaps in. Its Blue, Red, and White low-voltage lines, or pilot circuit, are wired to conveniently located terminals on the work bench.

Another advanced feature for test benches is some type of intermittent timer, perhaps the one-hour clock and cam movement from a stoker control, or an electric heater element and room thermostat mounted in a heat box. Such a timer may be used, for example, to give current to a special circuit for ten minutes out of every half hour, to check on the starting ability of a motor or the performance of a relay. If the device which gives the intermittent current is not of the clock type, an electric clock may be used to total up, perhaps every 24 hours, the "on" time. Using only commonly available control parts, a burner expert possessed of a bit of ingenuity can rig up a timing device that will provide for a test circuit an "on" time of any desired length, from a few seconds to many hours, together with an "off" time of any desired length. Highly advanced tests which call for the use of such programs call also for help from recorders of the on-off type, temperature type, and perhaps of other types.

The testing of complete stack control panels, of the type standard today for power burners, is accomplished without the use of elaborate test bench arrangements by dealers who can try out a control panel on the burner that heats their shop, or on a demonstration burner. This gives a check-up of the panel in action, and is preferred by some practical-minded servicemen who can not tell by examining such a control whether or not it is in perfect order. A test laboratory set-up for checking stack control panels must, to be complete, feature simulated stack heat. A gas flame or an electric heater can be used, and the control can be put through its paces dozens of times a day in the laboratory, doing the same things and handling the same loads as on an actual installation.

For the test-minded dealer, there is work also in the direction of shop-testing of the oil handling parts of burners, the oil pumps, pressure regulating and shut-off valves, strainers, and nozzles. A discussion of this type of shop-testing will be covered in a later issue.

Romero and Wounded Vets Inspire Oil-O-Matic Workers

"THE BOYS OVER THERE need all the war material you can make. Keep up the good work." That was the gist of the message given by the movie star, Caeser Romero, in a recent talk before more than 2,500 war workers of the Williams Oil-O-Matic Corporation at Bloomington, Ill. Romero, boatswain mate second class in the U. S. Coast Guard Reserve, is now making a tour of the nation's war plants to encourage workers to increase their war production for the Navy.

Shown watching Mrs. Hildred Gass, Williams employe, are John (Chico) Jurevich, machinist mate first class, U. S. Navy (left); Carl Siebert, motor machinist mate first class, U. S. Coast Guard (center), and Romero. Jurevich and Siebert, both wounded veterans, accompanied the movie star to Bloomington and talked to the workers.

National Warm Air Meet At Cleveland, Dec. 13-14

NATIONAL WARM AIR HEATING and Air Conditioning Assn. will hold its 31st annual meeting at Cleveland's Hotel Statler, December 13 and 14. Scheduled speakers for the two-day session are H. P. Mueller, the Association's president, C. E. Price, Keeney Publishing Co., J. R. Scott, chairman of the Association's Advertising Committee, R. W. Carney, Coleman Lamp & Stove Co., J. Harvey Manny, Robinson Furnace Co., J. Archibald Kiss, Advertising Counselor, Professors S. Konzo and A. P. Kratz, University of Illinois, Prof. L. G. Miller, Michigan State College, and A. H. Motley, publisher of "American Magazine."

Four New Oilburner Service Schools in East and Midwest

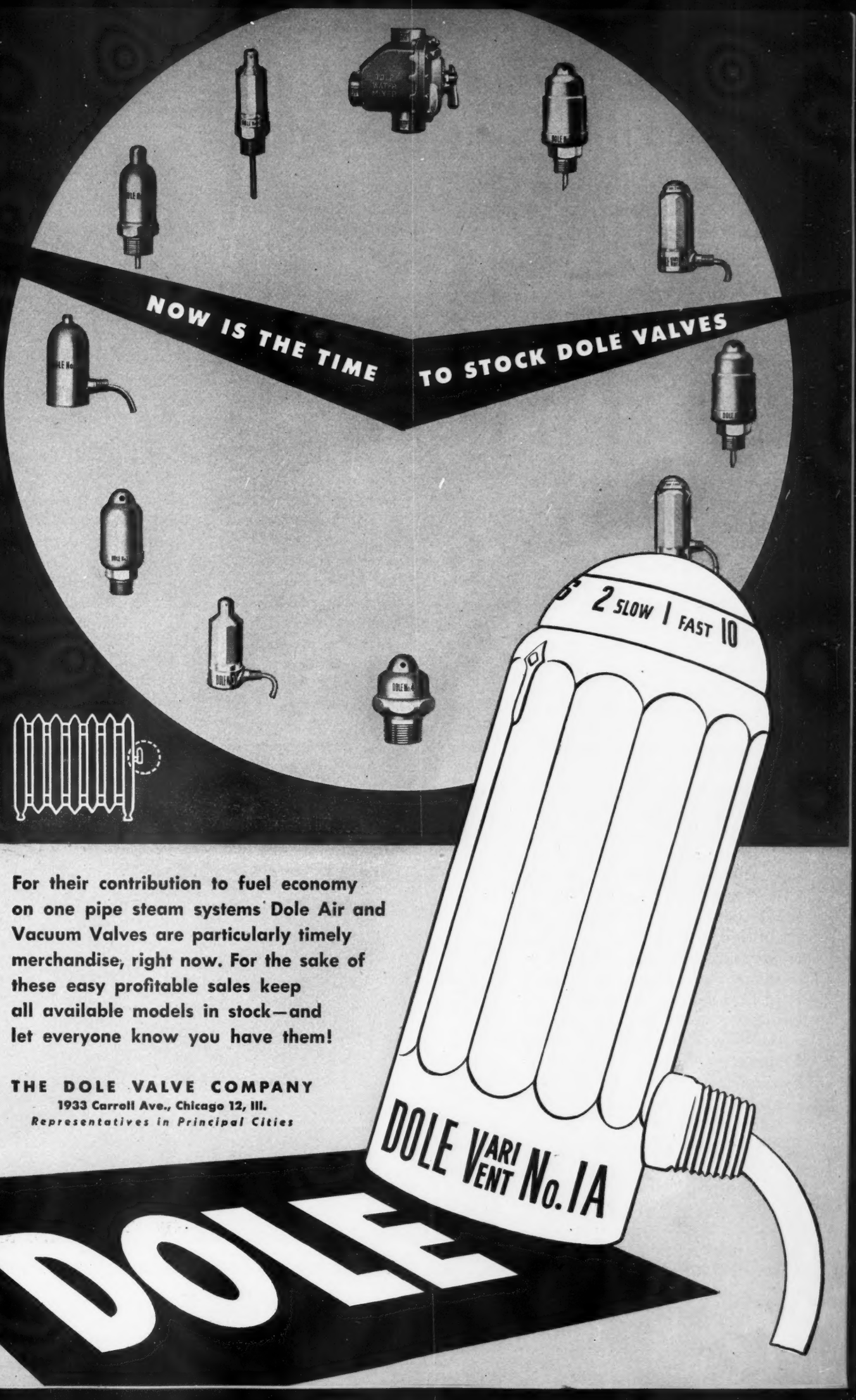
WITH MANY DEALERS aware of the constantly growing need for more and better servicemen (see READERS FORUM, page 63), it is of particular interest that four more schools have announced oilburner service training courses within recent weeks.

First of these was the Milwaukee School of Engineering, in which some two dozen adult students have enrolled. Most of them are men released from the Armed Forces, with Government paying their costs under the GI Bill of Rights. The Wisconsin Oil Heat Assn., Milwaukee, was responsible for getting the course started, and one burner manufacturer has loaned to the school the necessary equipment.

The Rochester Institute of Technology, Rochester, N. Y., has started a course with both evening and extension classes under the direction of one of the city's experienced burner servicemen.

The E. C. Goodwin Technical School, New Britain, Conn., is starting a course and is looking for a good instructor. If you know of one, write P. W. Bauer, Asst. Director.

The Philadelphia School system is starting an oilburner course in one of its technical trade schools. Frank Coonan of Modern Heat & Fuel Co. has been retained to outline the course for the school.



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Eastern Dealers Get Report on Current Problems at N. Y. Meet

FUELOILS MAY BE SHORT before the end of the present heating season dealers were told at the East Coast Meeting of the Distribution Division of Oil Heat Institute at New York, November 28. More than 250 dealers and their men attended the all-day conference at which industry experts and heads of Government agencies talked.

J. D. Collins, director of PAW's District 1, told the dealers that the combined demand for kerosene and light heating oils would be up 13% by the end of the year, while inventories would be off 6% from last year, and the current supply would be 16% below a year ago. This summary of the potentially tight eastern fueloil picture for this winter was emphasized by John Neukom, director of OPA's Fuel and Automotive Rationing Division. The relatively easy stock position at the start of the season should not have been a cause for optimism, he said, but only reflected government's attempt to provide a cushion against possible shortage of transportation later in the season.

The meeting was presided over by Gus J. Burrell, Vice-Chairman for the East in the Distribution Division. Frank Spencer, National Chairman, reviewed the work of the division since its inception more than a year and a half ago, and outlined briefly its program for the future.

The future program was amplified by Fred Beckwith, executive secretary of OHI of New England, who covered plans for promotion, dealer education and services that the Institute contemplates undertaking. He urged a course of service training for dealers' men, and an employment service that would make available competent men.

Robert Gray, FUELOIL & OIL HEAT, reported on the present gas competition in eastern areas, pointing out that the situation in Philadelphia and Westchester County, N. Y., was most serious, but that possible installations in these areas this season could not be great, since they were limited by the Office of War Utilities and the shortage of equipment. Though he saw no cause for concern in the present situation, he pointed to possible serious competition in the future, since the gas interests have been successful in reducing a handicap of 150% in raw fuel cost, to an actual handicap of 25% in cost of gas heating over oilheating. This, he believes, indicates an advance in the science of gas heating that must at least be equalled by the oilheating industry.

J. Henry Brody, president of OHI of New England, asked that a committee in the Institute be named to seriously study the profit possibilities in oilheating sales. He said it was desirable to know whether or not dealers must handle oil or other lines to make a profit, or whether oilburners alone offered profit possibilities. He predicted that profit margins would be shorter in the future, and there would be a premium on efficient management. Future costs, he believes are going up.

Henry Norris, chief of WPB's Heating Branch, sketched the history of the restrictions on oilburner production and sales, and said that the industry now has a lead on most other consumer durable goods businesses since most of them still are under the war restrictions on production. Though 30,000 domestic oilburners have been authorized in the fourth quarter this year, Mr. Norris indicated that not more than 10,000 are likely to be built because of a shortage of electric motors. Manufacturers' allowances could be carried over into succeeding quarters, he said, and as many as 40,000 burners may be built in the first quarter of 1945.

Mr. Neukom reported that the rationing program has been shaken down so it is now operating smoothly, and though many think fueloil rationing can and should be abolished, it is still necessary and probably will be continued to the end of the Japanese war, since the shortages are created largely by lack of transportation, and petroleum transportation will be in great demand in the Pacific war. He urged dealers to help in educating their customers on the need for conservation. There is little chance of any increase in coupon values which will be announced for Period 2 on December 12, or of combining Periods 2 and 3 in the East.

Mr. Collins pointed out that dealers' refusal to fill storage during the summer had cost the country 2,000,000 barrels of transportation that could not now be made up. Summarizing the East Coast situation in light fueloil this year compared with a year ago, Mr. Collins revealed the following figures:

	Stocks	*Supply*	*Demand*
Oct. 31	+16%	—10%	— 2%
Nov. 30	+ 4%	—15%	+13%
Dec. 31	—17%	—22%	+15%

It had been hoped that residual stocks would be 50% above last year at the end of December, but heavy November demands have pulled stocks down to about the same level as last year, Mr. Collins said. This can be regulated by control of standby facilities. He pointed out that PAW cannot afford to be

Luncheon, *Eastern Section, Distribution Division, OHI*

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F-11

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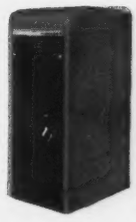
The American public has raised its sights — in this matter as in many others. When he moves his family into the new home which you have equipped for him, your customer expects complete satisfaction on this all-important point. It pays to secure as much of the building budget as is necessary to assure true indoor comfort — with a Mueller Winter Air Conditioner.

It also pays you to deal with a reputable source, able to supply furnaces and winter air conditioners for homes of every type, size, and price range (old or new) . . . specifically designed for efficient operation with oil fuel.

Mueller's 87-year record of progressive design and dependable performance is your assurance that your installations will be known for their high standards of indoor comfort — for their efficient, economical heating. Install "Mueller Winter Air Conditioners" — with confidence that results consistently back up your judgment. Write for bulletins. *L. J. Mueller Furnace Co., 2009 West Oklahoma Ave., Milwaukee 7, Wis.*

Mueller Series 50 Oil-fired Winter Air Conditioner—Three sizes. Small size equipped with either vaporizing or pressure atomizing burner. Larger sizes with pressure burner only.



Mueller Series OVP Vertical Type Oil-fired Winter Air Conditioner — Equipped with Mueller Vaporizing Oil Burner. Burner and controls enclosed.

Mueller Series OHP Horizontal Type Oil-fired Winter Air Conditioner — Equipped with Mueller Vaporizing Oil Burner. Burner and controls exposed.

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HEATING AND WINTER AIR CONDITIONING

optimistic so long as the present possibilities of shortage exist.

A. E. Hess, managing director of OHI, promised continued work on gas competition, and outlined the other projects which are yet to be completed. He asked for the backing and help of local chapters in finding and training men for the industry, both for sales and service work, and pointed to the effort now being made to find a man to produce educational material, rewrite the Handbook of Oil Burning, develop a standard cost accounting system, develop standards of installation, and revise fueloil codes.

W. A. Matheson, president of Williams Oil-O-Matic Heating Corporation, warned that there was going to be no stanpede to buy oilburners after the war, but that they will have to be sold. People now have some more money than is required to meet their monthly bills, and they like it, he said. They are not going to rush to cash their war bonds to buy oilburners, Mr. Matheson declared. The burners are going to be sold one by one in people's homes, and that will require a lot of sales manpower. The ready made demand will not support the industry.

"Ours is a specialty selling job," Mr. Matheson said. "We must make selling a respected and desirable job which our young men will want to make their profession. There must be a rebirth of salesmanship if the industry and the country is to go forward. It is no problem to produce goods; the problem in all lines is to move those goods out of the factories into the hands of users. Our major postwar problem in the oilheating industry is exactly that. We have got to stop thinking of postwar employment in terms of factory employment, and plan to put young men to work selling that which we can so easily produce."

◈

J. D. Smith, manager of the sales promotion department of the York Corp., York, Pa., has been appointed advertising manager and will have charge of all sales promotion, publicity and advertising activities of York refrigeration and air conditioning. He has been with the York Corp. for nearly twenty years.

Industry Advisory Committee Assists OPA on Burner Prices

ELEVEN OILBURNER MANUFACTURERS have been appointed by the Construction Materials Price Division of OPA to assist the agency in working out methods to revise prices on oilburners. Some revision is necessary to prevent financial hardship for the factories that will build the 30,000 burners a quarter that have been authorized for replacement purposes by WPB, and for such other manufacture as may be authorized under the Spot Authorization plan. Members are:

E. P. Bailey, National Airoil, Philadelphia; R. S. Bohn, Preferred Utilities, New York; C. R. Collins, Quiet May, Baltimore; Joseph Hearst, A.B.C., Chicago; R. P. Johnston, S. T. Johnson Co., Oakland, Calif.; M. L. Judd, Delco Appliance, Rochester; W. A. Matheson, Williams Oil-O-Matic, Bloomington, Ill.; R. M. Sherman, Silent Glow, Hartford; Ray Whipple, Harvey-Whipple, Springfield, Mass.; P. B. Zimmerman, Chrysler Airtemp, Dayton; Stanton Fitzgerald, Beckett Engineering, Elyria, Ohio.

For Positive Oil-burner Ignition

with Little or No Radio Interference

General Electric ignition transformers provide an *unfailing* high-voltage arc—even igniting oil as cold as minus 10 C when the line voltage is only 70 per cent of normal. They also deliver ample current to overcome such conditions as cold spark points, and oil film on these points.

Our Class E transformers (electrostatically balanced) are virtually radio-interference proof. The mid-point of the high-voltage winding is grounded, and a grounded electrostatic shield is incorporated between the high- and the low-voltage windings.

Where burner design requires a transformer with an ungrounded or end-grounded secondary, we recommend our Class F transformers in combination with Pyranol capacitors or G-E filtering devices.

Ask your nearest office for Bulletins GEA-912D and GEA-2587. We will also be glad to help you get replacement parts to keep your customers' oil burners at top operating efficiency. *General Electric Company, Schenectady, N. Y.*

IGNITION TRANSFORMERS

GENERAL ELECTRIC

403-57-5205

WE WON A BATTLE BEFORE the WAR BEGAN

When the Micrometer Fan Control—an exclusive feature of the Silent Glow Air-Seel Burner—was developed, there were no war clouds on the horizon. That distinctive addition to an already fine engineering accomplishment was merely one more indication of Silent Glow's desire to produce the best.

Today, however, this device is enabling thousands of Air-Seel owners to enjoy comfortable, healthful and efficient heat in spite of fuel oil rationing for this Fan Control permits custom-fitting of the flame to the individual boiler, thus bringing that flame to peak operating efficiency.

And Silent Glow's host of dealers and service men are well aware of what this and other exclusive Air-Seel advantages have meant to them during the war period. The ability to make correct and permanent adjustments to meet the requirements of individual homes has helped to eliminate the need for frequent and lengthy service calls. To the service man, plagued with labor and material shortages, this was a battle well worth winning.

Let's win the real battle. Support the Sixth War Loan.

● The illustration shows but two of the innumerable Air-Seel fan adjustments which may be made depending upon the size, shape, construction and insulation of the house, the type of heating system and other variable factors.

fuelail & oil heat

Ration Hardship Amendment Due in Early December

BY THE TIME THIS appears in print, the new ration hardship amendment for this season will have been issued; it is scheduled for release December 2. Much simplified from similar amendments in previous seasons, it provides for putting the consumer who is in difficulty back on the beam for the season, and doing it in one lump rather than requiring repeated trips to the boards. It also permits the consumer to apply for relief before he runs into acute hardship, or is completely out of oil and coupons. *(Amendment 34)*

In handling domestic central heating consumers the boards will require that the applicant show reasonable proof that everything possible has been done to save oil and then will give relief in one of two ways. If the applicant got extra oil last season, the boards will give him the same amount. If this is the first time he has needed help, the board will determine the amount of oil and coupons on hand, then consult the late applicant table to see how much he should have to be on the beam to the end of the season, and issue an additional fueloil ration for the difference.

For central heating hardship applications other than domestic (or 1101 cases) the second method just described will be used—find out what they have, compared to what they should have at the date of application and bring them back into line by issuing the difference.

For space heater users, if their hardship is due to their having been cut by the floor area ceiling, the ceiling may be pierced to give them more oil, but not to exceed the amount shown in Table 9 for the floor area actually heated. If the applicant was not limited by the area ceiling, but still can't make out on his ration, reference will be made to the late applicant table and he will be given the difference between what he has and what he should have to finish the season.

Another amendment in preparation will extend the date for dealers' filing of Form 1198 from October 25 to December 31, and provide that the dealer may use either October 1 or December 15 figures in reporting his position.

Six other amendments issued since they were last listed in the magazine are:

Amendment 28: Provides for issuance of a ration for use in a new space heater furnished under WPB priorities and later acquired by the occupant, together with premises covered by such priorities.

Permits a ration for a used space heater acquired after August 24, 1943 if the applicant would be eligible for a new space heater at time of application.

Provides that Amendment 19 shall not be retroactive; in other words if a consumer had electric equipment for domestic hot water, lighting or cooking, and had also been given a fueloil ration for any of these purposes before this was prohibited by Amendment 19, he need not surrender that ration.

Extends the validity date of Class 3 coupon sheets issued before May 10, 1944 indefinitely, even though an expiration date may have been endorsed on the sheets.

Removes the limit of twice his current ration on inventory reserve permitted to a consumer by the District Director. This applies only to commercial, industrial or Governmental uses.

Amendment 29: Permits users of residual oil for heating to get additional rations in such quantity as to restore nor-

THE IMPROVED ROTARY TYPE

MASTER FUEL OIL BURNER

Designed to burn No. 5 or No. 6 Fuel Oil

For
Industrial Plants
Schools
Churches
Apartments
Garages
Laundries
Public Buildings
Marine Applications

Distributors:

Do you qualify as an experienced distributor of rotary heavy fuel oil burners? If you will tell us your complete story, it may lead to an attractive, exclusive distributorship.

MANUAL, SEMI-AUTOMATIC OR AUTOMATIC OPERATION
RANGE OF SIZES FROM THE SMALLEST TO 350 H.P.

MASTER OIL BURNER

Division of
KETCHAM WIRE & MFG. CO.

1200 6th AVE., SO.
SEATTLE 4, WASH.

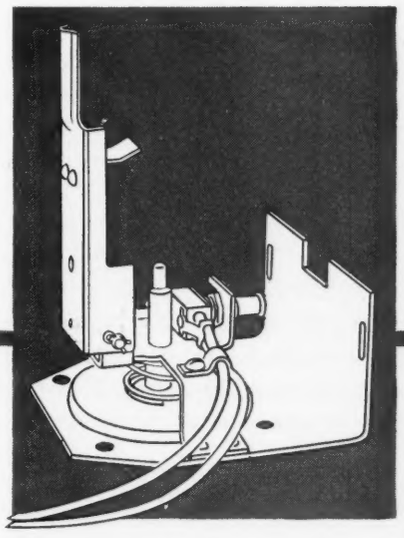
With this "plus" G-E dealers soon can cash in on postwar demand for heating equipment

IN the postwar heating market, opportunities for sales (and *profits*) should not be long in coming—at least for distributors of General Electric Automatic Heating Equipment.

For they will have an advantage over competition . . . an immediate sales "plus" in General Electric's wartime research and engineering experience which a cautious public can readily understand and appreciate.

It is not yet time to "unveil" the G-E heating units of tomorrow. But these years of research, you may be sure, will pay dividends—in quieter, more compact and efficient equipment, easier to install . . . easier, too, to *sell*. Be among the first to cash in on postwar demand for automatic heating—write for G-E franchise information. *General Electric Company, Heating Division, Section 44812, Bloomfield, New Jersey.*

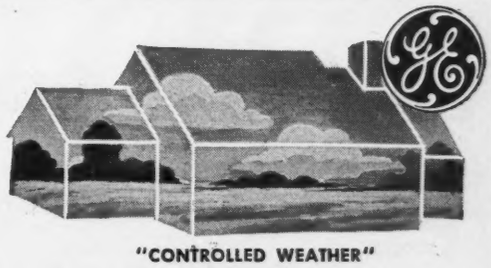
☆ BUY...and hold...WAR BONDS ☆



THE G-E FLUE PRESSURE SWITCH—an *exclusive* protective feature incorporated in G-E pre-war heating units. The Flue Pressure Switch (the safety valve of your fire box) shuts your furnace down immediately if abnormal pressures should develop in the combustion chamber—a *selling* point for the dealer . . . a *buying* point for the purchaser. There will be many such exclusive features in the G-E heating equipment of the future . . . offering new sales opportunities for General Electric dealers.

Automatic Heating by

GENERAL ELECTRIC



"CONTROLLED WEATHER"

Hear the General Electric Radio Programs: The "G-E ALL-GIRL ORCHESTRA," Sundays, 10 p. m., EWT, NBC..."THE WORLD TODAY" News, Every Weekday, 6:45 p. m., EWT, CBS

fueloil & oil heat

mal consumption, or a 50% increase.

Amendment 30: Permits residential consumers (or other heating users up to 10,000 gallons annually) who converted their heating plants from oil to another fuel to reconvert to oil and get a ration.

Amendment 31: Provides that where standby facilities are not adequate for the purpose for which a ration is sought, the standby must still be used to its capacity and a ration issued for the remainder of the need.

The Amendment also contains three provisions relating to rations for operation of ships and the use of ration checks by the Armed Forces and other exempt agencies.

Amendment 32: Provides that all OPA offices, including local boards, shall open a ration bank account before December 1, 1944. Henceforth ration checks will be issued in place of present fueloil deposit certificates or exchange certificates. Likewise, any other person now required to surrender exchange certificates shall, beginning January 21, 1945, use instead a ration check.

Amendment 33: When a person is reconverting equipment previously converted to another fuel back to oil, he may get a ration in advance of the actual date of completing the reconversion, so that he will be able to get oil immediately. He must convince the board that the reconversion is under way or will soon be undertaken.

Season's Greetings

A NEW IDEA IN RADIANT HEATING

DESPITE the fact that the major portion of our efforts the past few years has been devoted to War Work, we MADE time to develop improved and new ideas in connection with Heating Equipment.

In the near future we expect to announce an entirely new and different heat distributing unit which will place Radiant Heating (which is already accepted as the finest type of heating) so far ahead of other types of heating that it cannot be considered other than in a class by itself.

It will produce comfort you never dreamed possible.
It will be out of the way and practically invisible.
It will maintain more comfortable lower room temperatures.
It will be located where the greatest heat loss takes place.
It will last as long or longer than the building in which it is installed.
It will be easy to install.
Its cost will be very nominal.
Watch for future announcements.

Burnham Boiler Corporation

Season's Greetings

IRVINGTON, NEW YORK—DEPT. O
ZANESVILLE, OHIO—DEPT. O.

Export Department
50 Church St., New York 7, N. Y.

Pipelines Half Paid For, With $200,000 Daily Profit

FOR THE FIRST TIME the Defense Supplies Corp. has released operating figures on the Big Inch and Little Inch pipelines running from Texas to the East Coast. Realizing a daily operating profit of some $200,000, in another year the Government's total investment of 143 million dollars in the two lines will have been liquidated.

Of particular significance, the cost per barrel of transporting oil through the lines has been considerably lower than anticipated and decidedly lower than tanker costs from the Gulf area to the East. While the Government has had no offers from oil companies to buy the lines for postwar use, Jesse Jones, Secretary of Commerce, believes that the figures prove that such an investment would be sound.

Recognizing that the release of profit figures on the lines will no doubt bring requests from the oil industry and the public to remove some or all of the increased cost to consumers, put on to help defray high transportation costs, Jones points out that pipeline profits are helping to reimburse DSC for its subsidy payments on oil hauled by tank cars, and that Government is still well in the red on total compensation payments.

Operating Costs

On the Big Inch line, transporting only crude oil, the report discloses these operating costs: gathering cost in the fields and transporting the crude to Longview, Texas, the line's starting points, 23¢ per barrel; moving the oil in the line to New York, 8¢ per barrel; depreciation and amortization of investment in 20 years, including interest on working capital, 7¢ per barrel; total operating cost, 38¢ per barrel. Since DSC gets 80¢ per barrel revenue from this line, profit is 42¢ per barrel.

Compared with these costs, tankers would have a gathering cost of 17.6¢, and transportation cost of 43¢, based on cur-

"You Bet...! I'll make more money with the Master Kraft Franchise!"

Here's Why:

Because Master Kraft has a postwar line that'll sell easily, fast. It's different . . . not a prewar line with a new face—but NEW advanced design conversion burners and complete packaged units that give out more heat for their size and weight than anything you've ever seen. The principle in this line has been thoroughly tried out in the war—under all sorts of rigorous conditions.

Because during these 3 years of war, Master Kraft has gained priceless experience and new knowledge. Not just making bits and parts—but in *designing* and manufacturing *complete* special high performance aircraft heaters for the armed forces.

Because there will *not* be a big, cumbersome unit in the Master Kraft postwar line. You no longer need to spend hours assembling a furnace or boiler unit on the job . . . you simply take the compact Master Kraft unit down the cellar stairs—still in its shipping case—knock off the boards—and there she sits, all in one complete unit, with the jacket on—all controls connected—ready to fire.

Because: Servicing of this postwar Master Kraft equipment will be the simplest possible . . . pull two pins and remove the entire unit, slip another into place. You'll have to see this quick detachable feature to realize the time it'll save you, the money it'll make for you, and the quick service it will mean for *your customers.*

Because Master Kraft has always been manufactured to highest standards of precision workmanship from the best materials obtainable. The public has come to recognize Master Kraft as a symbol of *quality.*

Because: The Master Kraft Finance Plan gives you your money promptly from every sale.

Because Harvey-Whipple, Inc., makers of Master Kraft—gives dealers the kind of advertising, sales, and engineering help they need to make sales—fast and profitably. It is a story well worth hearing—before making your postwar plans. Want to hear all of it? Write to . . .

Master Kraft

REG. U.S. PAT. OFF.

OIL HEAT

MANUFACTURED BY

HARVEY-WHIPPLE INC., Springfield, Mass.

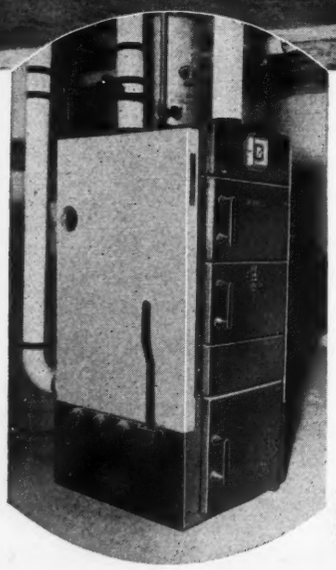
fuel oil & oil heat

rent War Shipping Administration rates, or an over-all cost of 60.6¢ per barrel. Peacetime tanker costs will obviously be lower, but it is generally recognized that they cannot get down to pipeline costs. Overland tank car hauls represent a gathering cost of 7.5¢ and transportation $1.522, or total cost $1.597 per barrel.

Comparable cost figures for the Little Inch line, moving refined products, are: delivering products to line 0.4¢ per barrel; transporting through the line from the Gulf Coast to New York, 10.6¢; depreciation, amortization and interest on working capital, 13.3¢; total, 24.3¢ per barrel. In return, DSC gets 65¢, so profit is about 40.7¢ per barrel. Comparable tanker costs for refined products would be 40¢, and rail costs $1.74, with no detailed breakdown of these figures given in the report.

Quantities moved through the Big Inch to September 30, 1944, were 44,951,946 barrels from Longview to Norris City, Ill., and 110,726,371 barrels to New York. Total product deliveries through the Little Inch to the same date were 37,400,945 barrels.

War Housing with *Post-War* HEATING



STURDY • DURABLE • EFFICIENT

H.B. *Smith* BOILERS

installed in this attractive Springfield, Mass., Defense Housing Project assure home buyers of heating that is up to pre-war and post-war standards.

The hand-fired "15" SMITH-MILLS boiler installed in each home can be converted to automatic firing when the war is over.

In Springfield, Massachusetts, the name of "Penno-Built Homes" has become synonymous with "value received." Equipment for the last completed Penno development built expressly to house a portion of Springfield's swollen war worked population was carefully selected to make sure that purchasers were buying homes that would represent an investment of continuing value — not merely temporary shelter.

The installation of H. B. SMITH cast-iron boilers throughout this project is assuring a low consumption of hard-to-get fuel for the winter ahead, and modern, comfortable heating for the years to come.

THE H. B. SMITH COMPANY, INC., WESTFIELD, MASS.
BOSTON NEW YORK PHILADELPHIA

OPA Burner Service Charges Outlined in New RMPR 165

EFFECTIVE NOVEMBER 15, Revised Supplementary Service Regulation No. 19 to Revised Maximum Price Regulation 165 has been issued by OPA, outlining in somewhat clearer detail what a dealer may charge for oilburner and stoker service. It applies to all burners using No. 5 oil or lighter and stokers with a capacity of 1,200 pounds per hour or less. Briefly, the provisions are:

A table of maximum hourly rates is set up for cities of different size:

Population of City	*First Hour*	*Succeeding Hours*
500,000 or more	$2.50	$1.75
100,000 to 500,000	2.00	1.50
Less than 100,000	1.50	1.25

Population is based upon 1940 Census. Nothing may be added to these rates for mileage or time spent in going to or from the job. A full hour charge may be made for any part of the first hour. For second and succeeding hours, the charge is figured on the basis of 15 minute periods.

OPA District Directors may upon application authorize the use of these rates in suburbs outside the limits of cities of the sizes mentioned. In other words, if a dealer is permitted to charge $2.50 in his city and crosses the line into a suburb of perhaps 40,000 population, where the maximum rate would be $1.50, he can ask the District Director for permission to charge the higher rate in the suburb.

This price table need not be used by all dealers. It must be used as maximum by all service firms who have not filed a schedule of higher prices with their local price and rationing boards, these prices based upon what they charged in March 1942. If they are charging higher prices, as of March 1942, because they have filed these higher prices, they must post conspicuously a schedule of the filed prices.

The price table may be used by those who in March 1942 were charging less than the table or rendering free service.

The prices in the table need not apply if the customer has a yearly or seasonal contract for service at a fixed sum, but dealers may not use such service contracts unless they have filed their contract prices, based upon March 1942, with their boards and posted them publicly in their places of business, showing not only the price, but also what the contract includes.

When Oilheating and Fueloil Men Need Facts They Consult and Use . . . . .

The Oilheating Yearbook

The JANUARY STATISTICAL and REVIEW ISSUE

For 20 years oilheating dealers and manufacturers have relied on the January Issues, for facts and figures on industry volume, prices and trends. It has been a comprehensive source of dependable statistics, widely used by production and marketing men, and during the war by Government agencies

1945 promises to be the transition year, from restricted production to a revival of open marketing. The YEARBOOK will be preserved and copies will be bought all during the year.

TO ADVERTISERS, The YEARBOOK is an excellent place to tell your full story. It will be seen and read thoroughly at a most important time—when all members of our industry will be studying new equipment and supplies, enlarging inventories of existing stocks, and renewing old and making new buying connections. There is a huge backlog of demand to be met.

Order your space today, and be sure!

PRESS TIME—DECEMBER 30

FUELOIL & OIL HEAT

232 MADISON AVENUE NEW YORK CITY 16

• LExington 2-4566

Boiler Salesman Crashes Radio and News Headlines

HEAVY COMPETITION means little to "Rudy" Wickel, representative of Fitzgibbons Boiler Company, Inc. In spite of the combined news appeal of World War II and the recent election, Mr. Wickel made headlines in newspapers all through the east, with over 400 news articles.

Briefly, the story is this:—Ralph Edwards, MC on the Truth or Consequences broadcast on Saturday nights, has been calling out for several weeks, "Is there a Mr. Wickel in the audience?"

At the November 4 broadcast the same question was asked. Mr. Wickel arose and was called up to the stage where a brass band greeted him, and four sturdy men carried him around the studio. After this greeting he was introduced to Mr. Appleby, the lawyer for the estate of the "Late Peckinpaw Wickel" who advised him he was the apparent heir to the terms of the will.

The bequests which Mr. Wickel received on the stage were, a large wicker chair with Wickel written upon it; a doormat with "Wickel welcomes you" painted on it; a bassinet for Wickel Jr.; a full set of linens for bedroom, bath and dining room inscribed with the name Wickel and a large flannel nightgown embroidered with Mrs. Wickel.

"Rudy" Wickel

After he had accepted these bequests he was advised that there was a further clause in the will which stated that Peckinpaw Wickel had left a sum of $1,000 in silver dollars buried in a metal box. Mr. Wickel was furnished with a map showing that the money was buried in Holyoke, Mass., on the site of an old lumber mill. He was outfitted with a miner's cap, shovel and pick, knee pads and a lamp and set on his way on the 12:10 A.M. train to Holyoke.

The rest of the story is history. When he got there 1,500 Holyoke residents armed with everything from a spoon to a bull-dozer, had been frenziedly digging—and the money had been found by others.

On Saturday, November 11, Wickel returned to the studio and received a consolation prize in the form of a check for $1,000, but "Peckinpaw Wickel" had forgotten to write the name of the bank on which the check was drawn and he had to find the right bank between that time and November 18. There are over 15,000 banks in the United States.

On November 15 Mr. Wickel located the bank—in his home town, Verona, N. J.—claimed the money, and found it to be in Confederate bills! So it is still hot news as to how and when Mr. Wickel ultimately will get his $1,000.

B&W INSULATING FIREBRICK

In this fuel emergency, savings up to 10% on fuel oil consumption are surely worth getting. Help your customers get such economies by recommending replacement of heavy firebrick combustion chambers with B&W K-20 Insulating Firebrick. Easy to install. Light in weight. Absorb little heat. Reach operating temperature rapidly. Respond quickly to thermostat. High CO_2, less smoke or smell. Get full particulars now—write:

ARMY E NAVY

THE BABCOCK & WILCOX COMPANY
Refractories Division
85 LIBERTY ST., NEW YORK 6, N. Y.
R-184

BABCOCK & WILCOX

DELCO helps all 3

. . . dealer . . . salesman . . . serviceman

Dealers find that Delco Appliance products are built right and function satisfactorily . . . are priced right and so yield a good profit.

Salesmen find that Delco Appliance comprehensive selling aids so dovetail with Delco Appliance advertising that ratio of actual sales to the number of prospects contacted is increased.

Servicemen find Delco Appliance Installation and Service Manuals really save them time in doing the best job.

And, furthermore, *all* know that when there is anything new and better in their business, Delco Appliance will supply it.

It will pay you to find out *now* if the Delco Heat franchise is available in your community. Write: Delco Appliance Division, General Motors Corporation, Rochester, N. Y.

KEEP ON BUYING WAR BONDS—AND KEEP THEM!

BUILT AND BACKED BY GM GENERAL MOTORS

Automatic DELCO-HEAT

FOR OIL, COAL OR GAS

fuel oil & oil heat

Rationing Div. Promotions

SINCE THE CONSOLIDATION of two major OPA rationing divisions a month ago to form the Fuel & Automotive Rationing Div., headed by John Neukom as director, several key men in the former Fuel Rationing Div. have been advanced to more important spots in the combined setup.

Fred Parker, who was chief of the Stove Rationing Branch, is now deputy director of the enlarged division. Victor Thompson, formerly head of the Forms and Procedures Section of the Fuel Oil Rationing Branch, is now assistant director of the division.

Clyde Graves, who headed the Supply and Demand Unit for fueloil, now is in charge of a new streamlined section, combining Program Planning with Forms & Procedures. William Simmons was head of the Statistical Unit in the Program Planning Section for fueloil and has now been named head of a combined statistical section for the division, in charge of all statistical and research work for the Division's five programs, fueloil, gasoline, stoves, automobiles and tires.

Will the Burner be looking for a Home?

There will be more homes looking for oil burners, in the first post-war months, than oil burners looking for homes!

This condition will arise from the unprecedented, pent-up demand. Thousands of home builders will want the best in heating equipment. Additional thousands will need replacements for worn-out heating units.

And this demand will apply to HERCO heating equipment —proved for efficiency and economy under normal and wartime conditions.

WILL YOU BE LOOKING FOR HERCOS?

Make sure of getting the Hercos to meet the need in your territory during those post-war months when demand may far exceed supply.

Herco's post-war dealership plan will assure you an equitable share of the first new Hercos produced. This plan entails no obligation. Get full information now . . . *write Herco today.*

HERCO OIL BURNER CORPORATION, Lancaster, Pa.

HERCO
The Oil-Thrifty
OIL BURNER

Service in Wartime Sales in Peacetime

U. S. Department of Labor Fueloil Prices September

FIELD INVESTIGATORS for the Department of Labor monthly check prices of principal fuels in several cities in each section of the country. Getting retail quotations from various suppliers in each market, the prices are averaged and published. Those in the table that follow were taken Sept. 15 (cents per gallon):

	Range	*No. 1*	*No. 2*	*No. 3*
Boston	10.60	10.40	9.00	9.00
Bridgeport	10.30	..	9.00	9.00
Fall River	10.85	..	9.70	..
Manchester	11.10	..	9.70	..
New Haven	10.70	..	9.00	..
Portland, Me.	10.20	10.20	9.00	..
Providence	10.30	10.22	9.00	..
Baltimore	..	9.82	9.00	..
Buffalo	10.40	10.40	9.50	9.50
Newark	..	10.25	9.00	9.00
New York	..	..	9.09	9.09
Philadelphia	..	9.90	8.93	8.91
Rochester	11.00	11.00	9.70	9.70
Washington	..	10.42	9.40	..
Chicago	7.96	7.45	7.45	7.45
Cleveland	..	8.55	..	8.03
Detroit	..	8.45	7.93	7.42
Des Moines	..	8.36	7.75	7.75
Milwaukee	8.50	8.50	8.00	8.00
Minneapolis	8.51	8.23	8.12	8.12
Omaha	..	8.10	7.60	7.60
St. Louis	8.47	7.75	7.55	7.55
St. Paul	8.47	8.23	8.14	8.14
New Orleans	..	8.72	7.21	7.21
Norfolk	..	10.00	8.80	8.80
Richmond	..	10.30	9.00	9.00
Denver	..	8.16	7.14	..
Portland, Ore.	..	7.30	6.30	..
Seattle	..	7.78	6.75	..

Accessory Manufacturers Discuss Regulations

FIFTEEN MEMBERS of the Accessory Division of Oil-Heat Institute of America met at Chicago, November 10, at the call of W. A. Kemp, chairman of the division. Malcom Henning, chairman of the Planning Committee, presided at the session which was called to consider the changes in Government regulations, and to map ways and means of meeting the increasing demand for oilburner parts and accessories without interference with war work.

Most manufacturers expressed belief that the growing demand for oilburner parts could be met without difficulty, though there was some concern over the possibility of meeting immediate demands for motors and transformers while the large military demands on machine time continue. Most equipment can be supplied in reasonable quantities without difficulty.

Readers' Forum

BAERENKLAU & COMPANY, INC.
Brooklyn, N. Y.

Editor:

Regarding the critical conditions existing in the oilheating industry due to service problems, I firmly believe the manufacturers could do a real job for the industry and for the public if they would get together and appoint their best mechanical men to operate training schools for service men in principal cities.

As you know, most dealers have lost many of their best men, by their either going into war industries or starting a service business of their own. Those who have gone into their own service business, I have found in this territory, are taking the public over in the worst way, charging enormous prices for parts, often selling parts not necessary, plus a ridiculous charge for their personal services. This condition will cost the industry a great deal of business in the future, especially to gas competition.

There are, undoubtedly, schools for oilburner service men in other cities the same as in Brooklyn and New York territories, but these schools do not teach the men complete service work as they should know it, and I feel that the manufacturers could do this job in a much better way with the dealer furnishing the manpower to be trained.

Undoubtedly, many of the other dealers are in the same position, and I again repeat that if manufacturers would operate such schools, it would be the biggest thing that they could do for themselves, for the industry and the public.

ALBERT G. BAERENKLAU,
Vice-President & Treasurer.

◈

ESTATE STOVE CO., Hamilton, Ohio, held its first distributors' meeting at Cincinnati, November 15. The company recently has put distribution of its Heatrola heating stoves, gas and electric ranges in the hands of distributors, and change from its former direct-to-dealer policy. The market for oilfired space heaters was covered for the distributors by A. E. Coburn, FUEL-OIL & OIL HEAT, and K. C. Richmond, editor of *Coal Heat*, spoke on the market for coalfired equipment.

With a MEL-GUAGE You can Rely on Simplified Installation and Accurate Readings

***Adjustable* MEL-GAUGES have been scientifically developed in answer to the demand for an accurate, easy to install and economical fuel-oil gauge that may be easily adjusted to indicate tank contents at all times. The specialized workmanship and beauty of MEL-GAUGES are readily appreciated by all yet the patented *adjustable* feature is of particular importance to fuel-oil equipment manufacturers, their salesmen and service men as it has proven to be a definite sales feature and eliminates many trouble calls.**

Economical ★ Dependable

Although *adjustable* MEL-GAUGES appear to be a more costly type of gauge they actually cost no more than ordinary gauges due to specialized quantity production. Two models of MEL-GAUGES are at present being featured, Model C as illustrated for costlier installations and Model A1 where economy is the first requirement, yet both of these models can be relied upon for dependable, accurate and *adjustable* service.

ORDER YOUR MEL-GAUGES NOW FOR POST-WAR REQUIREMENTS

DISTRIBUTORS and JOBBERS . . . There are still many valuable territories open for MEL-GAUGE representation. Write us today concerning territorial agreements.

Write for this file size folder and compare the features of the patented *adjustable* MEL-GAUGE **NOW**

Mel-Gauge COMPANY
EAST HAVEN, CONNECTICUT

Connecticut Specific Prices

AMENDMENT 20 to OPA's Maximum Price Regulation 88 includes among other provisions a complete spell-out of wholesale and retail kerosene and retail distillate prices for the State of Connecticut. These are:

9. Section 2.6 (a) (1) (i) is added to read as follows:

(i) For kerosene, No. 1 fuel oil and range oil.

Township or city	F.o.b. terminals loaded into tank cars or transport trucks (cents per gallon)	Loaded into buyers' tank wagons (cents per gallon)	Loaded into containers in quantities of 10 gallons or less (cents per gallon)
Bethany	..	7.8	11.3
Bethel	..	8.2	11.3
Bloomfield	..	8.0	10.5
Branford	..	7.8	11.3
Bridgeport City	7.5	7.8	11.3
Bridgewater	..	8.2	11.3
Bristol City	..	8.3	..
Brookfield	..	8.2	11.3
Cheshire	..	8.4	11.6
Chester	..	8.0	..
Cromwell	7.7	8.0	..
Danbury	..	8.2	11.3
Darien	7.4	7.7	8.0
East Hartford	7.7	8.0	10.5
East Haven	7.5	7.8	11.3
Easton	..	7.8	11.3
East Windsor	..	8.0	10.5
Essex	7.7	8.0	..
Fairfield	..	7.8	11.3
Glastonbury	..	8.0	10.5
Greenwich	7.4	7.7	8.0
Groton	7.6	7.9	10.4
Hamden	..	7.8	11.3
Hartford City	7.7	8.0	10.5
Killingly	..	8.2	..
Manchester	7.7	8.0	10.5
Middlebury	..	8.4	11.6
Middletown	7.7	8.0	10.5
Milford	..	7.8	11.3
Monroe	..	7.8	11.3
Naugautuck	..	8.4	11.6
New Briton City	..	8.3	..
New Canaan	..	8.0	..
New Fairfield	..	8.2	11.3
New Haven City	7.5	7.8	11.3
Newington	..	8.0	10.5
New London City	7.6	7.9	10.4
New Milford	..	8.2	11.3
Newton	..	8.2	11.3
North Branford	..	7.8	11.3
North Haven	..	7.8	11.3
North Stonington	..	8.0	..
Norwalk City	7.4	7.7	..
Norwich City	7.6	8.0	10.5
Old Lyme	..	8.1	..
Orange	..	7.8	11.3
Plainville	..	8.3	..
Portland	7.7	8.0	..
Prospect	..	8.4	11.6
Putnam	..	8.3	..
Redding	..	8.2	11.3
Ridgefield	..	8.2	11.3
Rocky Hill	7.7	8.0	..
Sherman	..	8.2	11.3
South Windsor	..	8.0	10.5
Stamford	..	7.7	..
Stamford City	7.4	7.7	..
Stonington	..	7.9	10.4
Stratford	..	7.8	11.3
Tarrington City	..	8.4	..
Trumbull	..	7.8	11.3
Vernon	..	8.3	..
Waterbury City	..	8.4	11.6
Watertown	..	8.4	11.6
Weathersfield	7.7	8.0	10.5
West Hartford	..	8.0	10.5
West Haven	7.5	7.8	11.3
Westport	..	7.8	11.3
Weston	..	7.8	11.3
Wilton	..	7.7	8.0
Winchester	..	8.4	..
Windsor	..	8.0	10.5
Windsor Locks	..	8.0	10.5
Wolcott	..	8.4	11.6
Woodbridge	..	7.8	11.3
Woodbury	..	8.4	11.6

10. Section 2.6 (a) (2) is amended to read as follows:

(2) *Maximum tank wagon prices.*

Township or city	Kerosene, No. 1 fuel oil and range oil on deliveries of 25 gallons or over (cents per gallon)[1]	Nos. 2, 3, and 4 distillate fuel oil on deliveries of 100 gallons or over (cents per gallon)[2]
Andover	10.6	9.2
Ansonia	10.6	9.1
Ashford	10.6	9.3
Avon	10.6	9.4
Barkhamsted	10.9	9.6
Beacon Falls	10.6	9.1
Berlin	10.6	9.4
Bethany	10.3	9.0
Bethel	10.8	9.1
Bethlehem	10.9	9.3
Bloomfield	10.5	9.2
Bolton	10.5	9.2
Bozrah	10.6	9.1
Branford	10.3	9.0
Bridgeport City	10.3	9.0
Bridgewater	10.8	9.2
Bristol	11.0	9.4
Brookfield	10.8	9.1
Brooklyn	11.0	9.1
Burlington	11.0	9.4
Canaan	10.3	9.3
Canterbury	11.0	9.1
Canton	10.6	9.4
Chaplin	10.6	9.2
Cheshire	10.8	9.0
Chester	10.5	9.2
Clinton	10.5	9.2
Colchester	10.6	9.2
Colbrook	10.9	9.6
Columbia	10.6	9.2
Cornwall	10.9	9.3
Coventry	10.6	9.2
Cromwell	10.5	9.2
Danbury	10.8	9.1
Darien	10.3	9.0
Derby	10.6	9.1
Durham	10.5	9.2
East Granby	10.6	9.2
East Haddam	10.5	9.2
East Hampton	10.5	9.2
East Hartford	10.5	9.2
East Haven	10.3	9.0
East Lyme	10.4	9.1
East Windsor	10.5	9.2
Eastford	10.6	9.3
Easton	10.3	9.0
Ellington	10.6	9.3
Enfield	10.7	9.3
Essex	10.5	9.2
Fairfield	10.3	9.0
Farmington	10.6	9.4
Franklin	10.6	9.1
Glastonbury	10.5	9.2
Goshen	10.9	9.6
Granby	10.6	9.3
Greenwich	10.3	9.0
Griswold	10.6	9.1
Groton	10.4	9.1
Guilford	10.5	9.0
Haddam	10.5	9.2
Hamden	10.3	9.0
Hampton	10.6	9.2
Hartford City	10.5	9.2
Hartland	10.7	9.3
Harwinton	10.9	9.6
Hebron	10.6	9.2
Kent	10.8	9.2
Killingly	11.0	9.1
Killingworth	10.5	9.2
Lebanon	10.6	9.2
Ledyard	10.4	9.1
Lisbon	10.6	9.1
Litchfield	10.8	9.6
Lyme	10.5	9.2
Madison	10.5	9.2
Manchester	10.5	9.2
Mansfield	10.6	9.2
Marlboro	10.5	9.2
Meriden	10.6	9.4
Middlebury	10.8	9.3
Middlefield	10.5	9.2
Middletown	10.5	9.2
Milford	10.3	9.0
Monroe	10.3	9.0
Montville	10.6	9.1

Allen and Allen Dealers and Distributors are "Going Places!"

The pilot light in the 10-inch burner uses less than 1/33 of a gallon of oil in a one-hour period, operating on low pilot. (Patent Pending) Listed as Standard by Underwriters' Laboratories, Inc.

REVOLUTIONARY new improvements in famous ALLEN Cooking and Heating Appliances have been developed by ALLEN Engineers. These features have been incorporated into ALLEN Oil Burning Parlor Furnaces, Oil-Burning Water Heaters, and Combination Ranges.

Now is the time to identify yourself as the ALLEN Dealer in your community.

SEE US AT FURNITURE MART
CHICAGO — 17th FLOOR

ALLEN MANUFACTURING COMPANY, INC.
NASHVILLE, TENNESSEE
"Quality Stove Builders Since 1867"

Township or city	Kerosene, No. 1 fuel oil and range oil on deliveries of 25 gallons or over (cents per gallon)[1]	Nos. 2, 3, and 4 distillate fuel oil on deliveries of 100 gallons or over (cents per gallon)[2]
Morris	10.9	9.6
Naugatuck	10.8	9.3
New Britain	10.6	9.4
New Canaan	10.3	9.0
New Fairfield	10.8	9.1
New Hartford	10.9	9.6
New Haven City	10.3	9.0
New London City	10.4	9.1
New Milford	10.8	9.2
Newington	10.5	9.2
Newtown	10.8	9.1
Norfolk	10.3	9.3
North Branford	10.3	9.0
North Canaan	10.3	9.3
North Haven	10.3	9.0
North Stonington	10.4	9.1
Norwalk	10.3	9.0
Norwich	10.5	9.1
Old Lyme	10.6	9.2
Old Saybrook	10.5	9.2
Orange	10.3	9.0
Oxford	10.6	9.1
Plainfield	11.0	9.1
Plainville	10.6	9.4
Plymouth	11.0	9.3
Pomfret	10.6	9.3
Portland	10.5	9.2
Preston	10.5	9.1
Prospect	10.8	9.0
Putnam	10.6	9.3
Redding	10.8	9.1
Ridgefield	10.8	9.1
Rocky Hill	10.5	9.2
Roxbury	10.8	9.2
Salem	10.6	9.2
Salisbury	10.3	9.3
Saybrook	10.5	9.2
Scotland	10.6	9.2
Seymour	10.6	9.1
Sharon	10.3	9.3
Shelton	10.6	9.1
Sherman	10.8	9.2
Simsbury	10.6	9.2
Somers	10.7	9.3
South Windsor	10.5	9.2
Southbury	10.6	9.1
Southington	10.7	9.4
Sprague	10.6	9.1
Stafford	10.7	9.4
Stamford	10.3	9.0
Sterling	11.0	9.1
Stonington	10.4	9.1
Stratford	10.3	9.0
Suffield	10.7	9.3
Thomaston	10.8	9.3
Thompson	10.6	9.3
Tolland	10.6	9.3
Torrington	10.9	9.6
Trumbull	10.3	9.0
Union	10.7	9.4
Vernon	10.6	9.3
Voluntown	10.6	9.1
Wallingford	10.5	9.2
Warren	10.8	9.2
Washington	10.8	9.2
Waterbury	10.8	9.3
Waterford	10.4	9.1
Watertown	10.8	9.3
West Hartford	10.5	9.2
West Haven	10.3	9.0
Westbrook	10.5	9.2
Weston	10.3	9.0
Westport	10.3	9.0
Wethersfield	10.5	9.2
Willington	10.6	9.3
Wilton	10.3	9.0
Winchester	10.9	9.6
Windham	10.6	9.2
Windsor	10.5	9.2
Windsor Locks	10.5	9.2
Wolcott	10.8	9.3
Woodbridge	10.3	9.0
Woodbury	10.8	9.2
Woodstock	10.6	9.3

[1] Sellers may add 1.5c per gallon on single lot deliveries of less than 25 gallons.
[2] Sellers may add .5c per gallon on single lot deliveries of less than 100 gallons.

DUO-THERM DIV., Motor Wheel Corp., Lansing, Mich., has appointed RCA Victor Div. of Radio Corporation of America as distributor for its heating appliances in countries outside of the United States. RCA Victor has subsidiary companies in eight countries and distributors in 120.

In the Bombing of Tokyo . . .

BOSTON AUTO GAGES

are part of the team in B-29's

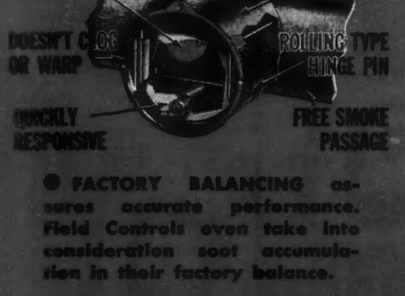
TRIUMPH MAGNETIC LIQUID LEVEL GAGES give the infallible answer to the vital question: "How much gas have we?"

Specify TRIUMPH MAGNETIC LIQUID LEVEL GAGES—Stocked and sold by leading Distributors everywhere. . . . For liquid level gage accuracy — leak-proof for fuel and fumes—insist on TRIUMPH, made by

THE BOSTON AUTO GAGE COMPANY

PITTSFIELD, MASS.

THE TAIL THAT WAGS THE DOG!



● **FACTORY BALANCING** assures accurate performance. Field Controls even take into consideration soot accumulation in their factory balance.

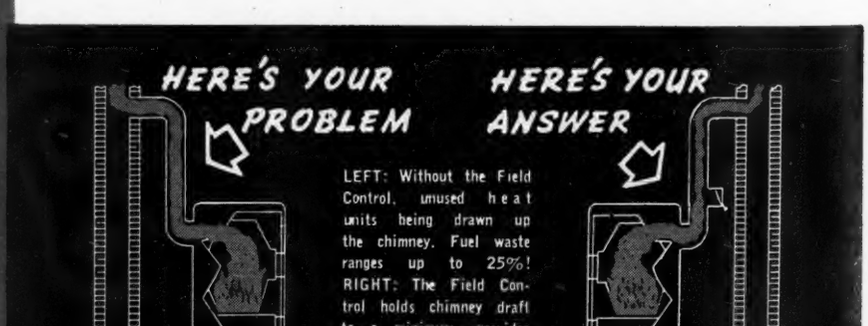
● **OFF CENTER GATE MOUNTING** means greater sensitivity to draft changes, fuel saving up to 25%.

● **ROLLING TYPE HINGE PIN** means no friction, no binding, no need for oiling, long life and no service calls. An exclusive FIELD feature.

● **SIDE WINGS** make a more uniform opening for air, thus increasing accuracy of Control.

● **EXTENDED HOUSING** places the gate outside the flow of fouling gases and soot, prevents warping.

● **An inadequate draft control can make a *good* heating unit work *bad*! But accurate, precision draft regulation by the FIELD can make a *good* heating unit work like a *charm*. Thus, selecting the *right* draft control is a *vital decision*, far more vital than the cost of this appliance indicates. If a FIELD DRAFT CONTROL is not already standard equipment on every heating unit you sell, write, and let us give you the full story today.**


HERE'S YOUR PROBLEM
HERE'S YOUR ANSWER
LEFT: Without the Field Control, unused heat units being drawn up the chimney. Fuel waste ranges up to 25%!
RIGHT: The Field Control holds chimney draft to a minimum, provides fuel savings up to 25%!

FIELD CONTROL DIVISION of H. D. CONKEY & COMPANY

MENDOTA, ILLINOIS

I-B-R Approves Reorganization Plan

PLANS FOR THE REORGANIZATION of The Institute of Boiler and Radiator Manufacturers were approved at the annual meeting in October, and will become effective on January 1, 1945. The new setup will provide wider representation on I-B-R committees.

The new plan provides for a general Engineering Committee on which every member will be represented. Working under the Engineering Committee will be committees on Boiler Technical, Radiation Technical, Research, Installation, and Boiler Rating. Each of these five groups will take over functions of several existing committees, and each chairman will report to the Engineering Committee.

Among technical and engineering matters discussed at the October meeting were amendments to the I-B-R boiler testing and rating code, recommendations of stoker manufacturers on firebox dimensions, suggested changes in the convector code, and a proposed boiler construction code.

A technical manual known as Installation Guide No. 1 is being printed for contractors, architects and engineers based on work that has been done at the University of Illinois Research Home. It was recommended that training classes be established at various points to instruct manufacturer and distributor sales forces on the contents and purposes of the Guide. Plans for these meetings will be made by the Market Research Committee.

A. E. Bastedo, vice-president of Burnham Boiler Corp., Irvington, N. Y., was elected chairman of the Institute, succeeding W. H. Stockwell who has served two terms. R. E. Ferry, general manager of I-B-R, was re-elected treasurer.

DEGREE DAY TABLES

ONE MONTH ONLY — October Normal	October 1943	October 1944	Percent Change*		SEASON TO DATE (Sept. 1 to Oct. 31) Normal	1943	1944	Percent Change*
410	466	512	+ 24.8	Albany	526	656	639	+ 21.4
130	151	130	..	Atlanta	142	170	134	— 5.6
230	273	246	+ 6.9	Baltimore	264	327	273	+ 3.4
338	355	363	+ 7.3	Boston	436	475	453	+ 3.8
410	512	467	+ 13.9	Buffalo	535	703	586	+ 9.6
334	363	373	+ 11.6	Chicago	418	530	450	+ 7.6
274	289	291	+ 7.2	Cincinnati	326	377	332	+ 28.8
354	416	383	+ 8.1	Cleveland	446	555	472	+ 5.8
70	83	30	— 56.0	Dallas	75	84	30	— 60.0
415	344	306	— 26.2	Denver	539	437	393	— 25.0
357	374	284	— 20.4	Des Moines	456	534	354	— 22.3
387	447	388	+ 0.2	Detroit	496	618	479	— 3.4
433	438	418	— 3.4	Grand Rapids	559	438	418	— 25.4
368	405	430	+ 16.8	Hartford	474	534	517	+ 8.8
601	548	505	— 15.1	Helena	889	774	773	— 13.0
27	39	8	— 2.9	Houston	29	41	8	— 73.0
299	306	292	— 23.3	Indianapolis	364	418	326	— 10.0
242	283	145	— 40.0	Kansas City	292	343	168	— 42.4
43	50	34	— 20.9	Los Angeles	48	50	39	— 18.7
218	234	229	+ 5.0	Louisville	252	234	245	— 2.7
409	421	430	+ 5.1	Milwaukee	529	625	546	+ 3.2
484	480	425	— 12.1	Minneapolis	647	716	559	— 13.6
23	60	13	— 4.3	New Orleans	25	60	13	— 48.0
274	317	283	+ 3.2	New York	325	382	318	— 2.1
325	381	258	— 20.6	Omaha	406	489	320	— 21.1
236	279	254	+ 7.6	Philadelphia	272	328	285	+ 4.7
324	394	383	+ 18.2	Pittsburgh	393	506	469	+ 19.3
459	492	542	+ 18.0	Portland, Me.	638	730	734	+ 15.0
298	279	155	— 47.9	Portland, Ore.	407	294	223	— 4.5
363	349	331	— 8.8	Providence	467	461	392	— 16.0
218	219	173	— 20.6	St. Louis	254	275	190	— 2.5
377	334	214	— 43.2	Salt Lake City	472	360	281	— 40.4
140	131	127	— 9.2	San Francisco	262	232	276	— 5.3
614	645	658	+ 7.3	Sault Ste. Marie	895	996	939	+ 4.9
372	330	231	— 37.8	Seattle	546	411	324	— 40.6
369	437	420	+ 13.7	Toledo	467	631	523	+ 11.9
254	278	280	+ 10.0	Washington	297	342	304	+ 2.3

*Compared with normal.

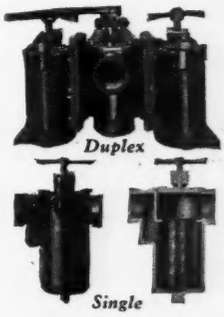
Proven by PERFORMANCE —

KRAISSL

Filters • Strainers • Pumps for FUEL OIL

Intelligent engineering is only the starting point. Consistent on-the-job performance over many years provides practical endorsement of KRAISSL design and manufacture.

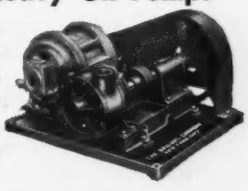
Class 72 Strainers and Filters



Single and Duplex types for suction or discharge service—any practical degree of filtration in units designed for low pressures as well as up to 500 lbs. hydrostatic test—easily removable filter basket insures quick cleaning.

Class 60 Heavy Oil Pumps

Standard equipment wherever independent pump and motor sets or booster pumps for pump-type burners are required.



Kraissl-Trumbull No. 522 Fuel Pump Unit

Rugged, dependable wall pump for gravity type oil burners having burning capacity of not more than 3 gals. per hour—Approved by Underwriters' Labs., Inc.

Submit your fuel-line problems to KRAISSL engineers—literature and prices on request.

THE KRAISSL COMPANY INCORPORATED

295 Williams Ave., Hackensack, N. J.

Chalmers' Celebrate Golden Anniversary

MR. AND MRS. C. H. CHALMERS celebrated their fiftieth wedding anniversary at their home in Minneapolis, December 5, with their two children and two grandchildren

C. H. Chalmers and Family

and a large circle of friends. Mr. Chalmers, one of the older "Old Timers" in the oilheating business has headed the Chalmers Oil Burner Company since 1920, and has been closely identified with association work. He was the third president of the American Oil Burner Association.

Mr. and Mrs. Chalmers were married in 1894, shortly after he had graduated from the University of Minnesota. Their two children are Royce Chalmers, Miami, Fla., and Mrs. Lorraine Chalmers Fenwick, Ogden, Utah.

Mr. Chalmers spent his early business life in the electrical machinery industry, and was vice-president and general manager of his own company after serving as chief engineer and assistant manager of another company. He withdrew from the electrical machinery business in 1910.

Prospects for the future in the oilheating business look bright, and Mr. Chalmers is looking forward to a bigger and better business following the war.

◈

OIL-HEAT INSTITUTE OF AMERICA, INC., will hold a Directors' Meeting at New York's Hotel Commodore, January 9, 1945. Members other than directors are also invited. C. F. Curtin, Secretary, urges any planning to attend to make hotel reservations now.

Industry Gets Two More Awards of Army-Navy "E"

BALLOFFET DIES AND NOZZLE CO., Buttenberg, N. J., has received its second Army-Navy "E" award for excellence in production for the war effort. The company is one of the very few that is skilled in diamond die work in the country, and has been highly praised for its production during the emergency.

FITZGIBBONS BOILER CO., Oswego, N. Y., has been awarded a second star for its Army-Navy "E" flag, signifying the third time the company has received the award. Besides boilers for locomotives to be used in occupied countries, the company has made hulls for M-7 tank destroyers, gun carriages and turrets and ventilating systems.

◈

Joseph Wilber, director of the Plumbing and Heating Division, WPB, resigned early in November to return to his civilian work as an associate of Hollis French, Boston, Mass. His successor is C. Ray Davisson, former deputy director of the Division.

YORK HEAT DISTRIBUTORS urgently need SALESMEN and SERVICE MEN

YORK HEAT

HERE'S YOUR CHANCE to tie-up and go places with one of the big names in the automatic-heating field . . . York Heat.

York Heat distributors in various parts of the country need experienced men immediately, to sell and service America's most complete line of oil-burning equipment. It's a first-class opportunity for energetic, first-class men, who want to make a place for themselves in this rapidly expanding industry.

If this description fits you, send your application to us at once, giving full particulars. We'll refer your letter promptly to the York Heat distributor nearest you, who can use your services.

YORK HEAT

Division of YORK-SHIPLEY, INC., YORK, PA.

Member Oil Heat Institute of America • Buy Bonds—Speed Victory

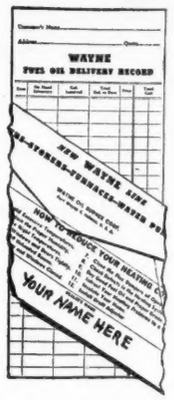
New! Convenient!

HEATING RECORD CONTAINER

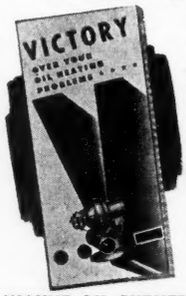
For Your Customers

FREE

TO ALL OIL BURNER and FUEL OIL DEALERS



As illustrated—especially designed as a container for fuel oil ration coupons. Front has place for customer's name and ruled form for keeping a complete record of fuel oil purchases. Reverse side lists 12 points on how to save fuel and has place for dealer imprint.



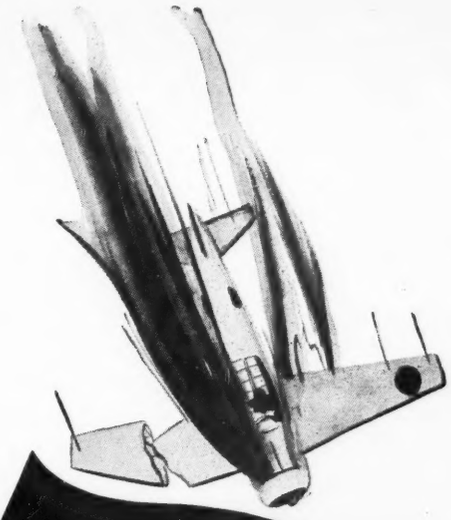
A gift your customers will appreciate —and it's FREE—to help you build post-war business and to get profitable service and accessory sales now. ORDER TODAY. State number desired using your business letterhead.

Wayne Victory Heating Manuals

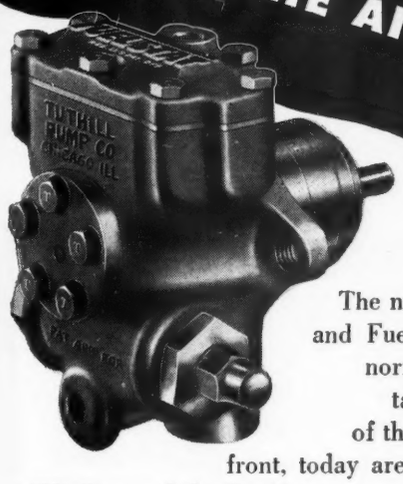
They're FREE to all Oil Burner and Fuel Oil Dealers. Order your supply of these manuals now. State number needed using your business letterhead.

WAYNE OIL BURNER CO. 9212 GLASGOW AVE. FT. WAYNE 4, INDIANA

WAYNE'S V-DAY LINE WILL BE COMPLETE



FOR THAT "NIP" IN THE AIR



The new Tuthill Pumps and Fuelstats that would normally be helping take the chill out of the air on the home front, today are helping take the "Nip" out of the Pacific.

In serving the Army, Navy, Air Force and Merchant Marine, these dependable pumps are all out for victory. That's why it's important to keep your present pumping equipment operating at top efficiency through careful repair and reconditioning at Tuthill authorized field service stations or at the factory.

★

Tuthill Pumps are serving Army • Navy Air Force • Merchant Marine and Industry

TUTHILL PUMP COMPANY

939 East 95th Street • Chicago 19, Illinois

ALL is not gold that glitters . . . the difference between 14 carat and gold plate is beneath the surface! Many propositions put up a good "front"—look attractive—have "eye-appeal". But when you consider a lifetime association—such as an oil burner franchise—it's reputation—leadership—quality—satisfaction—and customer demand that you want. When you get ready to talk business—come in and see Quiet May.

The proven and dependable Dual Utility Oil Heating Unit will be included in the line when we resume production.

May Oil Burner Corporation
Baltimore-3, Md.

fueloil & oil heat

Harvey Outlines Plan For Unit Service Sales

SID HARVEY, president of Sid Harvey, Inc., Valley Stream, N. Y., addressed the regular meeting of N.Y.O.H.A. at the Hotel Pennsylvania on November 13, 1944. The subject of Mr. Harvey's talk was "Service Problems in War Times, from the Management View Point." He stressed the importance of "unit replacement" where service was required on a major part of an oilburner installation, such as the fuel unit, motor, or control system, instead of attempting field repairs. Mr. Harvey pointed out the following advantages:—

1. The customer would be better satisfied, as it eliminates the possibility of "repeat" calls.

2. More customers could be served, as the average time taken to make a replacement with either a new or rebuilt unit would be less than that taken to try to find the cause of the failure and attempt to correct it in the field. This is particularly important as every service organization has more customers than he can handle.

3. The service department would make relatively larger sales per call. This added income should be very welcome in view of the restrictions on the sale of new burners.

◈

Buffalo A-C Council Is First I.C.I. Chapter

INDOOR CLIMATE INSTITUTE installed the first local chapter when the Air Conditioning Council of Western New York became Indoor Climate Institute, Western New York Chapter at a formal induction ceremony in Buffalo, November 14. The dinner meeting was presided over by W. E. Voisinet, president of the local chapter, and the speaker was Paul B. Zimmerman, president of Indoor Climate Institute.

Mr. Voisinet pointed out that the Air Conditioning Council of Western New York has been operating for eight years and has pioneered much of the same work that is being done by the Indoor Climate Institute. "Our members voted to join forces with the national I.C.I. in order to reinforce and broaden our public information and training programs," Voisinet said.

Dravo Shows Installations

DRAVO CORPORATION, Pittsburgh, has prepared a booklet entitled, "Portfolio of Outstanding Engineering in Industrial Heating." This booklet describes the direct-fired warm air method of heating and illustrates many of the great war structures which are heated by this method. These structures include, among others, the 35 acre Bomber Modification Center at Birmingham, Ala., numerous Ordnance Depots, Tank Arsenals, Naval Warehouses, and the Corrugated Sheet Steel Quonset huts used by the U. S. Armed Forces at advance bases.

These are only part of the installations of Dravo direct-fired heating, one of the most outstanding of which is the Ford Flight Hangar at Willow Run.

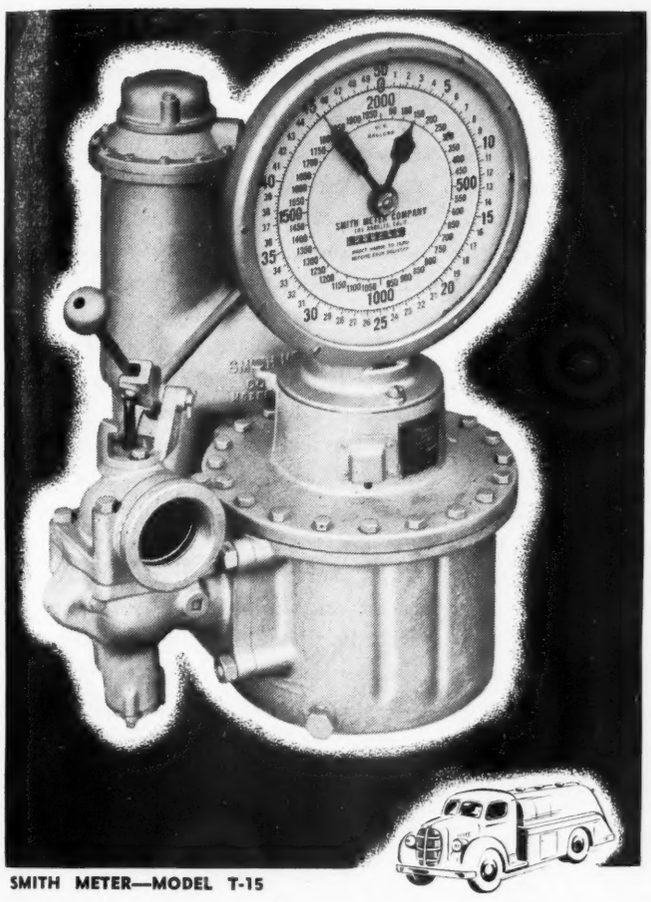
◈

Master Oilburner to Ketcham

KETCHAM WIRE & MFG. CO., Seattle, Wash., has taken over the manufacturing facilities of Master Oil Burner Co. for making burners using heavy oils and plans to establish American and export sales outlets for the burners.

TEESDALE
LEADS THE PARADE
INVESTIGATE the TEESDALE
Fully Automatic OIL BURNER
T. U. X. PUMP
The Heart Beat of the Burner's OIL FLOW
• Capacity: 30 gallons per hour
• Silent, Leak-proof
• Self-Priming
• Vapor, Oil Tight
• All parts are interchangeable
Passed by the Underwriters
TEESDALE MANUFACTURING CO.
427 MARKET AVE., GRAND RAPIDS 3, MICHIGAN

VINCO
SUPERFINE QUALITY LIQUID BOILER SEAL
DETECTS AND STOPS LEAKS
DOES NOT CAUSE PRIMING
VINCO
CERTIFIES YOUR HEATING SYSTEM INTERNALLY CLEAN
VINCO
RUST PREVENTER
Inhibits Corrosion in Heating Boilers
Vinco Test
Field Kit
VINCO
SOOT-OFF
SAFEST & BEST
Use the VINCO METHOD for Cleaning & Conditioning HEATING SYSTEMS
Let's protect existing installations, and conserve fuel, with VINCO Products—endorsed by leading boiler manufacturers.
For sale by all wholesalers of plumbing and heating supplies.
Ask For Folder "K."
THE VINCO CO., Inc.
305 E. 45 St., New York 17, N. Y.



SMITH METER—MODEL T-15

Precision Measuring for YOUR Money!

Petroleum meters measure *money*—and when on *your* trucks or your loading racks, they measure *your money*. A one per cent error can "rob you blind"!

That's why *accuracy* that *stays accurate* is the first *law* in the construction of *Smith* Meters. The simple, *time-proved* Smith Rotary Principle provides an *unequalled* combination of *speed*, stamina and *accuracy that stays accurate.*

★ ★ ★

Smith Truck Meter, T-15, shown above: easily adapted to any piping arrangement—24 combinations of counter, inlet and outlet positions. Available on priority.

SMITH METER COMPANY

SUBSIDIARY OF A. O. SMITH CORPORATION

Factories at Los Angeles and Milwaukee

SALES OFFICES AT NEW YORK • CHICAGO • HOUSTON • LOS ANGELES

DO YOU KNOW

THIS SIMPLE WAY

TO SIZE AND LAYOUT

ONE-PIPE FORCED HOT WATER

HEATING SYSTEMS?

SEND for this I-B-R INSTALLATION GUIDE

The latest data is now available. Based on studies made at the Institute of Boiler and Radiator Manufacturers' Research Home. Simple calculations, tables, layouts, problems, solutions!

I·B·R MEMBER

I·B·R MEMBER

50 YEARS OF SERVICE TO THE HEATING INDUSTRY

The NATIONAL RADIATOR Co.

218-W CENTRAL AVENUE · JOHNSTOWN, PA.

NAME

STREET

CITY STATE

Fueloil & oil heat

Fifth of Philadelphia Users Plan to Stop Burning Coal

ONE-FIFTH OF ALL Philadelphia families who now use coal for heating plan to shift to some other fuel after the war, according to a report from the Philadelphia Bulletin, based on a wide interview survey.

Using a carefully-selected cross-section of the city's families, interviewers for The Bulletin Poll asked:

"What kind of fuel is used to heat your home or apartment?"

The replies:

Coal	74%
Oil	24%
Gas	1%
Other fuels	1%

Each person then was asked:

"Do you plan to change to any other fuel after the war?"

The replies:

Yes	15%
No	68%
Uncertain	11%
No answer	6%

Those who planned to change then were asked to what fuel they planned to shift. The results as tabulated:

One per cent from other fuels to coal.

Four per cent from oil to gas.

Ninety-five per cent from coal. Of these, almost two-thirds plan to use oil; almost a third plan to use gas, and seven per cent are uncertain.

The figures gain greater significance when it is considered that 20 per cent of all home owners are planning to make a change, compared with nine per cent of the tenants. Among coal users who are also home owners, 30 per cent plan to depend on other fuels.

A few householders volunteered to interviewers their reasons for considering a change from coal. These fell into three groups — uncertainty of supply, inconvenience and price.

◈

WILLIAMS OIL-O-MATIC Heating Corp., Bloomington, Ill., has named Stewart, Hanford & Casler, Inc., Rochester, N. Y., to handle its advertising. L. A. Casler, vice-president and treasurer of the agency will service the account. Mr. Casler and the agency have been active with the heating field for many years.

Gasburner Manufacturers To Certify Performance

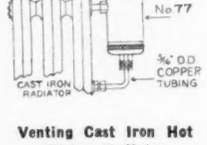
POSTWAR HOME BUYERS are to be provided reasonable assurance of satisfactory performance before their gasfired warm air heating system is installed, according to plans announced by the Association of Gas Appliance and Equipment Manufacturers, representing the makers of most of the country's gasfired forced air equipment. E. A. Weaver, chairman of the committee which worked out the plan, is sales manager of the Janitrol division of Surface Combustion.

The association has approved a set of standards covering controlled temperatures, controlled air circulation, humidification and air filtering. Any house built according to these standards will receive the association's certification of satisfactory performance, it was explained. The standards will be available to architects, house builders, heating contractors and home owners.

To some extent, the heating standards set by the manufacturers follow the Certified Performance plan for gas ranges. Not only have the competitive manufac-

CIRCULATION TROUBLES?

Don't fight air pockets or traps in hot or cold circulating lines! "Get that air out of there" *and keep it out* simply by installing the No. 7 Maid-O'-Mist Automatic Air Vent. This reliable air vent has a self-closing float-controlled valve and is designed especially for circulating pipe lines, convector radiators, unit heaters, cooling manifolds, tanks, diesel engines, or any other application where air pockets or traps retard the free circulation of liquids. For pressures up to 75 lbs. Now available in bright brass finish.



Venting Cast Iron Hot Water Radiator

APPROVED FOR NAVY, MARITIME COMMISSION AND ARMY USE

MAID-O'-MIST INC.

213 NORTH ABERDEEN STREET
CHICAGO 7, ILLINOIS

AUTOMATIC HUMIDIFIERS FOR ALL TYPES OF HEATING SYSTEMS

Want Advance Industry Facts?

★

FUELOIL & OIL HEAT's mid-month publication, "Merchandising News," brings you significant industry developments and Government regulations two to three weeks ahead of the monthly issue of the magazine.

It also frequently contains materials of a semi-confidential nature, not published in the magazine.

Subscribers to "Merchandising News" include most of the top-rank executives in oil-heating, key Government men and financial institutions.

The subscription price is $15.00 a year.

You need the earliest possible information in these fast-changing days.

FUELOIL & OILHEAT

232 Madison Avenue New York

turers agreed on the home heating standards, the committee chairman said, but they also have been correlated with the American Society of Heating & Ventilating Engineers, the Bureau of Standards, the American Standards Association, gas company engineers and other heating authorities. The heating units of the manufacturers must pass minimum requirements of American Gas Association in addition to the certified quality in order to qualify in the certification plan.

The Association of Gas Appliance & Equipment Manufacturers will undertake an educational program to acquaint the public on how certified heating performance may be obtained and cooperation of local gas companies is being sought in putting the plan into action, Weaver said.

◈

NATIONAL ASSN. OF HOME BUILDERS lists four firms of oilheating interest as exhibitors who have reserved space for its Postwar Exposition to be held at Chicago's Hotel Sherman, January 15-20. These are Bell & Gossett Co., Chrysler Airtemp Div., Minneapolis-Honeywell Regulator Co. and Norge.

Less Postwar Inflation Than 1919-20, Holden Says

SEVERAL FACTORS APPEAR to point to rising construction costs and to a generally higher price level for the postwar period as compared with prewar. However, postwar inflation on the scale that obtained in 1919 and 1920 seems unlikely. These observations are made by Thomas S. Holden, president of F. W. Dodge Corporation, in a study entitled, "What About Postwar Prices?" just published by his organization.

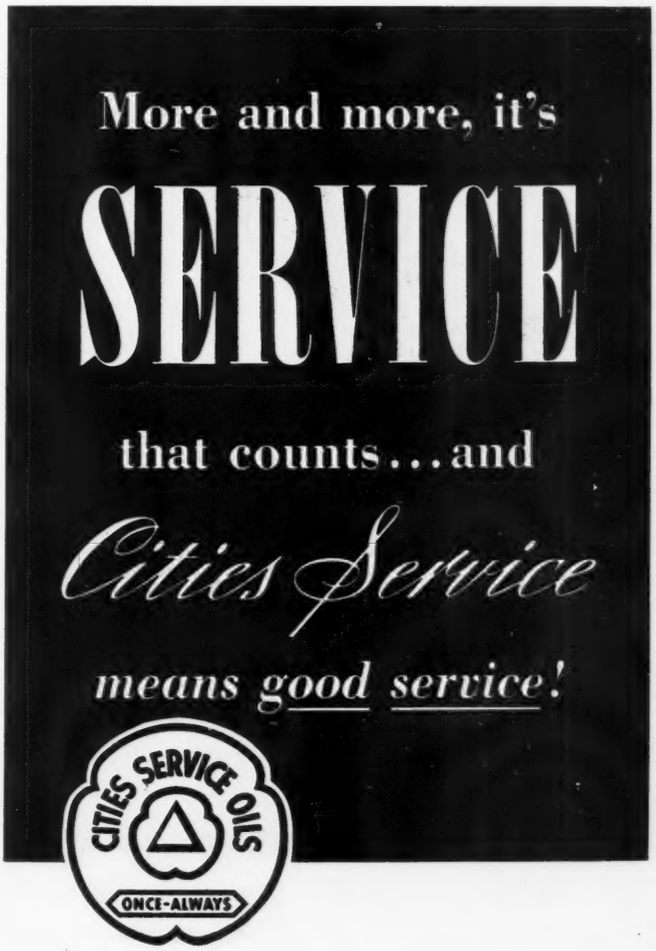
A study of price behavior before, during and after World War I and before and during the present conflict points specifically to three factors brought into play by both wars which spell rising prices after this one.

Mr. Holden defines these factors as: (1) wartime spending by government has spread purchasing power widely, has increased savings and the volume of money in circulation, and widened the potentialities of credit; (2) government debt has increased, and in enormously greater amount this time than in World War I; and (3) wartime limitations on civilian construction and on production of civilian goods generally have built up enormous potential demands.

"Price controls," Mr. Holden states, "have been much more effective this time. Business executives and people generally are more keenly aware of the dangers of rapidly rising prices than they were twenty-five years ago. At various times in recent years they have exercised considerable self-restraint in the face of price inflation threats. The government will probably seek to avoid drastic deflation and widespread unemployment likely to result from it. Statistics on current price trends, current production and inventories will be more widely available and more widely understood than in the years 1919 and 1920.

"The two wars we are fighting this time will not end simultaneously. There will be a partial reconversion to a peacetime economy in the period between V-E Day and V-J Day and gradual, rather than sudden, removal of wartime controls. Government must procure adequate materials to finish the fight against Japan, to support armies of occupation and, possibly, to aid in some measure reconstruction

WAKE UP
to the profits
IN AIR CONDITIONING UNITS AND FURNACE FILTERS
with
RESEARCH AIR FILTERS
TIME TO CHANGE
WRITE TODAY FOR FREE BOOK
Lists filter sizes for leading furnaces and air conditioning units. Makes it easy to service your customers. Write Dept. FO.
RIP CLEAN
RESEARCH PRODUCTS CORPORATION
MADISON (3) WISCONSIN



of devastated war-torn countries.

"Productivity of American industry and its adaptability to quick shifts in production schedules are much greater than in World War I.

"These differences are on the side of curbing inflationary tendencies in the postwar period. Actual price behavior will depend in large part upon the behavior of the spending public. An early spending spree could run prices up very rapidly.

"Nevertheless, postwar behavior of prices in general, and of construction costs in particular, will be of vital importance to early and sustained revival of construction activity. The situation will call for wise policies and reasonable self-restraint on the part of producers and distributors of materials and equipment and of skilled building labor."

◈

THE TRANE CO., LaCrosse, Wisc., has just issued a new catalog of heating, cooling and air handling equipment, showing products that will be available the moment restrictions are removed from civilian construction.

York Plans Simplified Line of Cooling Products

A STREAMLINED PROGRAM for postwar product development and redesign will make possible a reduction as high as 25% in the number of refrigeration and air conditioning items manufactured by the York Corporation, one of the nation's major producers of such equipment.

W. S. Stair, director of product development, says that one of the major postwar problems of the refrigeration and air conditioning industry at present is that of simplification and reduction in number of types and sizes of equipment without loss of either markets or potential applications.

"There are some 50 major markets for our products and in order to cover these markets York builds 55 different classes of commodities which, when broken down in various sizes, represent 400 different items, not including parts," Mr. Stair explains. The present policy, he said, is centered on establishing a list of postwar commodities which will include some of York's present products without change, others of the present line redesigned for lower costs, better performance and standardization and a certain group of entirely new products.

◈

Darling Leaves P.A.W.

KENNETH DARLING, for two years head of the Fueloil Section, Distribution & Marketing Division, PAW, Washington, has resigned to return to Socony-Vacuum Oil Co., New York. He is succeeded by R. W. McMillan, who has been chief of the Equipment Section. The Eqpt. Section has now been merged with the Motor Fuel Section, headed by C. B. Moore.

◈

EDDINGTON METAL SPECIALTY CO., Eddington, Pa., has issued an impressive catalog, No. 2046, with illustrations, diagrams and tables pertaining to nozzles, regulating valves, fuel units and other oilheating accessories.

CATSKILL METAL WORKS, INC., Catskill, N. Y., has a new booklet, "Opportunity," pointing out to heating dealers what it sees in stoker selling possibilities in the postwar period.

+ OR — 5/100ths G.P.H.!!

Fig. F-80

Close tolerances? Yes, but nowadays this is just the *regular* capacity tolerance of one of the small gallonage F-80 nozzles. . . . For certain exacting military requirements capacities are being held to *half* the regular tolerance!

You can depend on the uniformity of Monarch nozzles because *each one* is individually checked for capacity against the flow of a calibrated master sample—nozzles not within the tolerance are rejected.

New Catalog D gives complete information. Write for it.

MONARCH MFG. WORKS, INC.

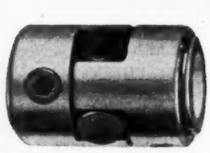
E. WESTMORELAND & SALMON STS., PHILADELPHIA 34, PA.

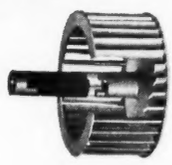
PROTECT your installations from VIBRATION—Insure Power Flow!

L-R FLEXIBLE COUPLINGS

FOR OIL BURNERS AIR CONDITIONING, ETC. *QUIET* PERFORMANCE.

Ready for IMMEDIATE DELIVERY





L-R Type "IA" Uniflex, 1⅝" to 3⅜" length overall. Pat. & Pats. Pend.

Manufacturers make blower wheels with L-R jaws integral with hubs.

L-R Type Double-flex, 2- and 3-piece, 1⅛" to 4⅞" length overall. Pat. & Pats. Pend.

WRITE FOR DETAILS AND PRICES ON ANY QUANTITY

LOVEJOY FLEXIBLE COUPLING CO.

5012 W. LAKE ST., CHICAGO 44, ILL.

They're Going Overboard For Victory—Are YOU?

USE 8-POINT PLAN FOR AN OVERBOARD DRIVE IN THE 6th WAR LOAN!

NOV. 20th TO DEC. 16th

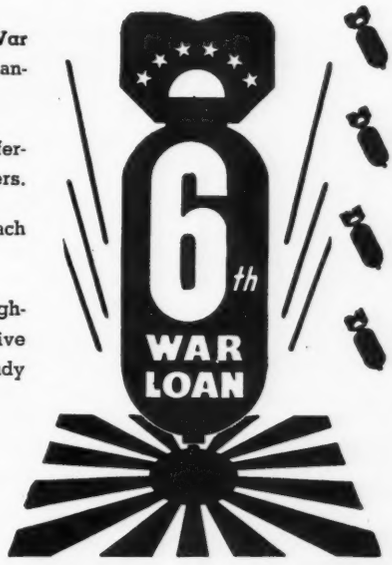
Our fighting men still have a long way to go! But—your plant-wide selling of the 6th can do much to shorten their embattled miles—lessen the price they so willingly pay for victory! Join the coast to coast parade of patriotic firms that are assuring an **"overboard" showing in the 6th** by following through on **every** point in the 8-Point Plan.

Start the ball rolling by appointing a **6th War Loan Bond Committee,** representing labor, management and other groups.

Carry on by selecting a **Team Captain**—preferably a returned veteran—for every 10 workers.

Right at the start, establish a **Quota** for each department—and every employee.

Arrange frequent **Meetings of Captains,** highlighting importance of their work—effective sales methods—and need for painstaking study of Treasury Booklet, Getting The Order.



Make definite **Assignments** to those best equipped to arrange music, speeches, rallies, competitive progress boards and meeting schedules.

Issue **Individual Pledge Cards**—made out in the name of each worker and providing for both cash and installment purchase.

Resolicit! This is the secret of "overboard" War Bond subscriptions. Your State Payroll Chairman has a special Resolicitation Plan for you to put into action near the end of the campaign.

Give generously of your **Advertising Space** to drive home the War Bond story.

The Treasury Department acknowledges with appreciation the publication of this message by

FUELOIL & OIL HEAT

This is an official U. S. Treasury advertisement—prepared under auspices of Treasury Department and War Advertising Council ★

fueloil & oil heat

Everyday Snags

Two Room Thermostats

The hall of this four-family apartment house was not a good place for the room thermostat that controlled the heat for the entire building. It was an inside hall with apartments on each side of it. For the cubical contents there was extremely little outside wall, just the vertical strip about 12 feet wide that formed the front of the building and the front of the hall. When the hall got hot, it seemed to stay hot until someone opened the front door, and very often in cold weather, when the landlord came from his own residence down the street, he found that the front door had been blocked open by one chilly tenant or another. Because of its small amount of outside wall and its low heat loss, the hall also had very little radiation for its cubical contents. As a result, once the oilburner did start on a freezing day, it ran for about two hours on steam pressure control, until the little hall radiator raised the hall temperature about two degrees.

The man who serviced the oilburner started to point out in 1941 that to eliminate the tenants' complaints about hit-and-miss heating the thermostat should be moved. Mention of this always made the landlord hit the ceiling. There was no place to put the thermostat but in the hall or in an apartment, he pointed out. In 1936 when the burner first was installed, more than 400 gallons of oil had been used in ten days, he recalled with horror and alarm, because the thermostat had been placed in the apartment of a tenant who had kept it set at about 80°. Following this, the tenant had proved capable of getting around every kind of thermostat locking device that could be provided, and to top it off had discovered that keeping open a window near the thermostat would keep the radiators nice and warm. Before the burner had been in use two months, the thermostat had been moved to the hall on the landlord's insistence, where he checked on it nearly every day and, with the help of a massive, locked wooden box he had built around it, succeeded in keeping the tenants from touching it. All they did was to telephone him at any hour of the night and day when their apartments became unbearably cold, or sneak out and help themselves by blocking open the front door.

In the summer of 1943, the new man servicing the oilburner became fed up with the hall thermostat idea. He studied controls and the details of the particular building, and then set out to plan a control arrangement that would do the trick, yet be acceptable to the owner of the building. The new system would have to be very inexpensive; installed, it could not come to more than $25. It would have to defy efforts of the tenants to increase the amount of heat. It would have to prove it was a good system by giving better heat on no more oil.

The first point was to install two room thermostats, in the living rooms of a downstairs and an upstairs apartment as the accompanying diagram shows, and wired in series with each other. The series wiring would work out satisfactorily only with the thermostats set higher than if only one thermostat were used for the building, therefore it was planned to set both the room thermostats at 74° to insure the living rooms of the four apartments being heated to a rockbottom of about 70°.

PETRO
REG. U. S. PAT. OFF.

DOMESTIC AND INDUSTRIAL
OIL BURNING EQUIPMENT

DOMESTIC—Pressure Atomizing-Models:

Residential "Conversion"—4 models, 1 to 6 g.p.h.
Commercial "Conversion"—3 models, 6 to 18 g.p.h.
Flange Mounting Special Models for popular boilers and furnaces.
Complete boiler—or furnace burner units.
Direct fired water heaters.

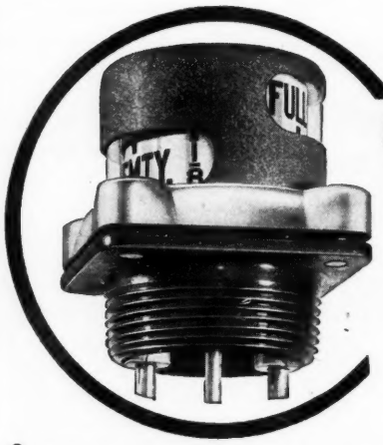
INDUSTRIAL—Rotary Cup Type-Burners:

8 sizes for #5 oil, 7 for preheated #6 oil with Petro "Thermal Viscosity" system, for manual, semi-, or full automatic operation to 145 g.p.h.

PETROLEUM HEAT & POWER COMPANY

Makers of good oil burners since 1903

STAMFORD CONNECTICUT



FOR CUSTOMER SATISFACTION *Install* ROCHESTER "UNIVERSAL" GAUGES

ROCHESTER "Universal" Gauges are built especially to meet the requirements of basement type oil storage tanks. Double dial—one visible to the delivery man outside the cellar, and one for the owner inside—is a convenient and much appreciated feature. Widely spaced, generous size graduations and figures are made possible by the extreme length of the dial which rotates through a 300° arc. There's no chance of leakage either.

The same magnetic principle used in Rochester Gauges to bring safety in gauging hazardous liquids under pressure is employed in these "Universal" Gauges. That's why they're listed as Standard by Underwriters Laboratories. Rochester "Universal" Gauges are easy to install in any location on the tank and without the necessity of emptying the tank. Obtainable on AA-3 priority from your jobber.

ROCHESTER MANUFACTURING CO.
8 ROCKWOOD STREET, ROCHESTER 10, N. Y.
Makers of Fine Gauges "FOR THE TRUE INSIDE STORY"

ROCHESTER Individually Calibrated GUARANTEED ACCURATE INSTRUMENTS
FOR ACCURATE LIQUID-LEVEL, PRESSURE and TEMPERATURE INDICATION

1. Absorbs condensation—keeps entire system water-free ✓
2. Dissolves gums and sludges ✓
3. Eliminates storage tank cleanings and pump-outs ✓
4. Keeps lines clear, prevents clogging and congealing ✓
5. Insures quicker starting ✓
6. Lessens oil baking on atomizers. Fewer burner changes ✓
7. Reduces carbon and soot ✓
8. Improves combustion ✓
9. Gives cleaner firing, faster heating ✓
10. Increases furnace and boiler capacity
11. Eliminates oil odors, smoky chimneys, puffs
12. Refractory brick work lasts longer

KLEEN-FLO contains no acids or harmful ingredients.

Check THESE BENEFITS WITH KLEEN-FLO

KLEEN-FLO increases oil burner efficiency—one quart conditions 500 gallons of oil—simply add thru oil fill line. Feature KLEEN-FLO—get EXTRA year-round profits

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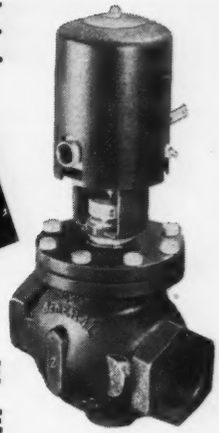

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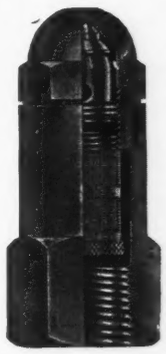

Fig. 246

Right now, "EDCO" production is bigger than it ever was in peacetime. Due to the ever increasing demand for "EDCO" Pumps, Pressure Regulating Valves, Pipe Line Strainers and Spray Nozzles by our Armed Forces, there is nowhere near enough left to meet the civilian demands — but they will be worth waiting for.

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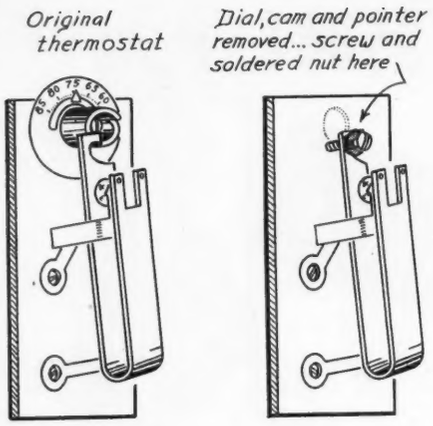
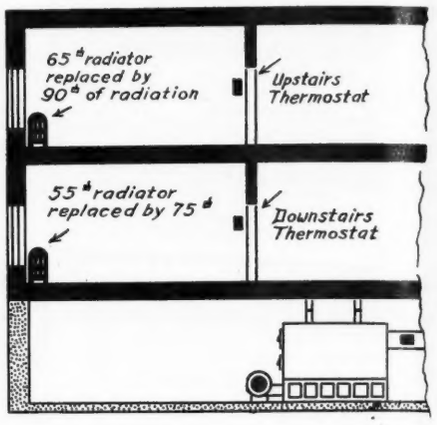
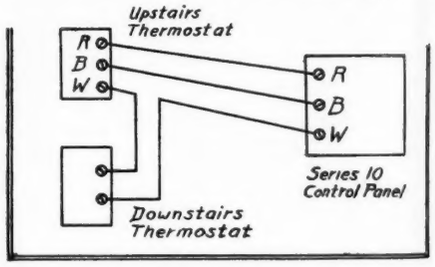


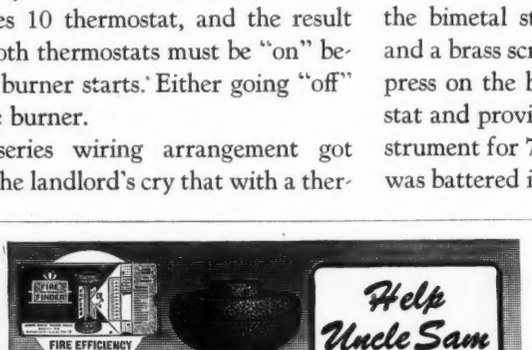
The thermostat installed with the oilburner was a Series 10 type. This was to be relocated and used in the upstairs apartment. An additional thermostat was to be purchased for use downstairs, and wired into the circuit of the first thermostat as the accompanying wiring diagram shows. Of the snap-acting two-wire type, this simply is cut into the white wire of the Series 10 thermostat, and the result is that both thermostats must be "on" before the burner starts. Either going "off" stops the burner.

The series wiring arrangement got around the landlord's cry that with a thermostat in his living room a tenant would learn to open a window to get the radiators hot. With the new arrangement, to use this trick would require that two tenants open their living room windows. Opening just one window near a thermostat might, on a fifty-fifty chance, start the oilburner, but then the burner would be stopped in a short time by the other thermostat.

Because the landlord kept insisting that his tenants could "get around" any kind of thermostat locking device, the serviceman did some hand work on a thermostat as the accompanying drawing indicates. Even if a tenant gets an Allen wrench and takes the cover off this trick-up thermostat, the oilburner man pointed out, he simply would not find a setting device to move or a dial to turn up to get more heat. The dial, cam, and pointer were removed from a standard plain room thermostat. A small hex nut was soldered to the bimetal strip as the drawing shows, and a brass screw was run through this, to press on the bakelite base of the thermostat and provide means for setting the instrument for 74°. The thread of the screw was battered intentionally to make it turn hard and eliminate the need for a lock-screw. When tests had shown the two thermostats to be set properly, the serviceman would put solder over the threads of the adjusting screws. Thereafter, if need ever did arise to set the thermostats differently, a serviceman armed with a sol-


65 ft radiator replaced by 90 ft of radiation
Upstairs Thermostat
55 ft radiator replaced by 75 ft
Downstairs Thermostat





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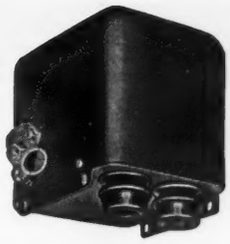

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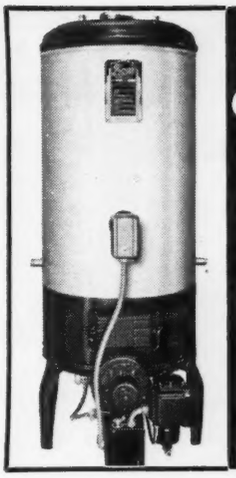

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dering iron and considerable knowledge of control instruments would be needed.

Check-ups on the amount of radiation in the living rooms of the four apartments showed a shortage in every one. Because the serviceman knew from past experience that one way to run the oil consumption skyhigh is to put the room thermostat in a room which is not well heated, he insisted on more radiation for the living rooms. For the upstairs, the living rooms were fitted with two 75 sq. ft. radiators to take the place of the 65 sq. ft. radiator installed originally. Downstairs, each 55 sq. ft. radiator in the living rooms was replaced by a 75 sq. ft. radiator. The radiation in all four apartments thus was increased to keep the living rooms on an equal basis; it would not do to increase the radiation only in the living rooms fitted with thermostats, for then the other two living rooms would be cold.

Since the new control system was installed and tuned up in the fall of 1943, with special care to the setting of the differential adjustments of the thermostats, the tenants and the landlord are far more content with the heating than they were before. The landlord seems to be just a little more pleased than he would be if the oil consumption was staying at its old level of about 4,400 gallons of oil a year, but he is cautious these days about giving out any information related to his oil ration and actual oil consumption.

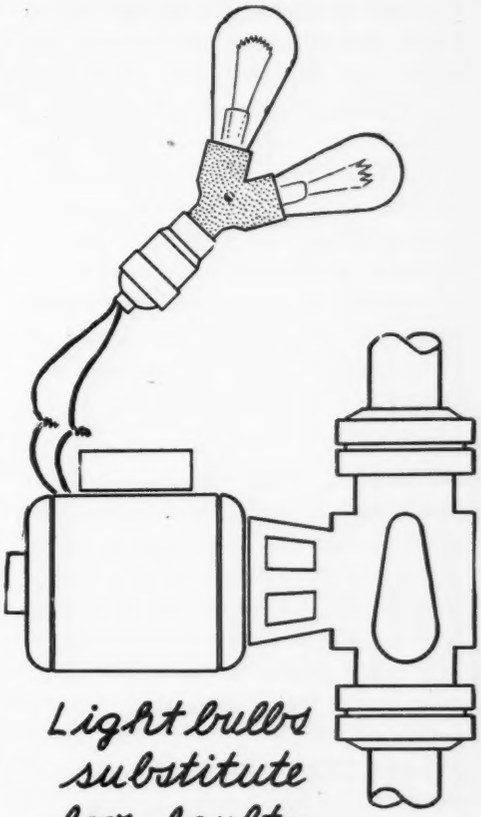
◈

Sick Capacitor Motor

Additional information has been requested regarding an emergency service step that can be used for ailing capacitor motors, which was described in a recent issue of FUELOIL & OIL HEAT and which is mentioned on page 4 of the new booklet, "Service Fundamentals." The idea is to try to use a resistance as a temporary substitute for a starting capacitor when a replacement capacitor is not available.

The accompanying diagram shows the proper wiring. After he has made sure by the proper tests that the capacitor-start motor is in good order except that the capacitor is defective, the serviceman wires an ordinary electric light socket in place of the capacitor as the drawing shows.

(*Continued next page*)



Light bulbs substitute for faulty capacitor

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Into this socket he screws a twin outlet fitting, and into this light bulbs of different sizes. He may, for example, try two 50-watt bulbs, then a 75-watt bulb with a 50-watt bulb, then two larger bulbs if this seems advisable. The bulbs which start the motor and provide the greatest starting ability are used until the capacitor needed for the motor is obtained. In several instances, the blower-drive motors of warm air systems and the circulator motors of hot water systems were operated for several weeks using this arrangement.

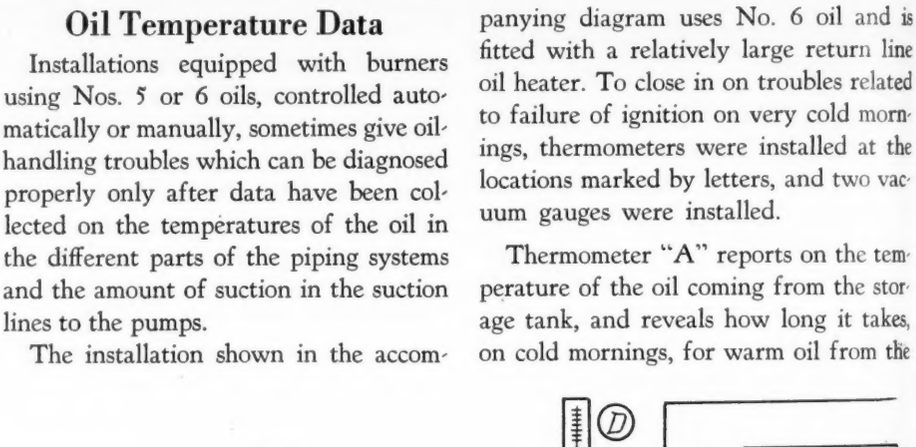
One not-too-serious disadvantage of the idea is that the bulbs flash on every time the motor starts, then go right out again as soon as the motor gets up to speed. Where the lights show outside through basement windows, this gives a weird effect in the middle of the night. To get around this, the bulbs can be placed, of course, in a light-tight metal container. To date, however, no serviceman using the trick has been found to be taking the trouble of eliminating the haunted house effect it gives.

Oil Temperature Data

Installations equipped with burners using Nos. 5 or 6 oils, controlled automatically or manually, sometimes give oil-handling troubles which can be diagnosed properly only after data have been collected on the temperatures of the oil in the different parts of the piping systems and the amount of suction in the suction lines to the pumps.

The installation shown in the accompanying diagram uses No. 6 oil and is fitted with a relatively large return line oil heater. To close in on troubles related to failure of ignition on very cold mornings, thermometers were installed at the locations marked by letters, and two vacuum gauges were installed.

Thermometer "A" reports on the temperature of the oil coming from the storage tank, and reveals how long it takes, on cold mornings, for warm oil from the



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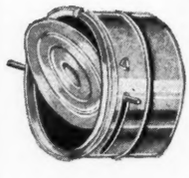

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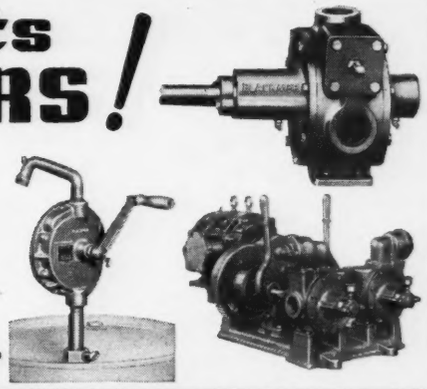

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heater to reach the suction line. A vacuum gauge is installed at "A" also, to indicate how "tightened up" the oil in the suction line is after a long period of burner idleness on a cold night. When the lines are warm, this vacuum gauge gives a clue as to whether or not the outside suction line is large enough for the amount of oil being pumped.

At "B" on the oil burner itself, and close as possible to the inlet connection of the oil pump, is a vacuum gauge to indicate (a) the maximum cold-start vacuum the pump works against, (b) the normal running vacuum at the pump inlet, and (c) with the pump free of air, and the suction line valve tight-shut, the maximum vacuum the pump can develop. Surprisingly different vacuum readings are obtained, on different healthy installations, at locations "A" and "B".

The temperature of the oil which is fed to the atomizing cup is read at "C". This is important in closing in on problems related to ignition, and to proper atomization and obtaining high CO_2 readings.

At "D", some distance from the oil heater to avoid errors caused by conduction of heat through the piping, a thermometer reports on the performance of the heater. Data invaluable for sizing oil heaters on new installations and jobs being revamped to use heavier oils, have come from thermometers at this location.

Unnecessary on some installations because it gives readings nearly the same as those obtained nearer the oil heater, on other jobs a thermometer at "E" is convenient for giving returning-oil temperatures to compare directly with readings from location "A".

Because good thermometers cost money, the dealer who installs all of those shown in the diagram may plan to remove several after he has obtained the data needed from them. The matter of which should be left in place on a new or revamped installation is settled easily by the instruments themselves, for during the studies it becomes apparent which of the instruments give readings needed.

A simple remedy was found for the cold weather, early morning starting difficulties of the installation shown in the diagram. To keep the oil lines warm enough on very cold nights, a boiler temperature control was installed to start the burner during the night when the boiler cooled to about 140°. This is not used daytimes and during mildly cold nights.

Space Heater Sales

(*Continued from page 41*)

15%; and the South taking 11%. It is believed some gain may be made in sales in the South, but the trend is not yet clear enough to make a prediction. It is argued that the smaller houses, built without basements or sufficient space for the storage of solid fuel, will use an increasing number of oilfired space heaters.

Replacements at the present level of space heater use are believed to demand about 200,000 units a year. About half the oilfired units now operating are more than five years old, and it is felt that the replacement market will absorb at least a million units in the first five postwar years. The rest of the sales would be new sales to new or existing homes, representing an expansion of the market by about 2,650,000 units in five years.

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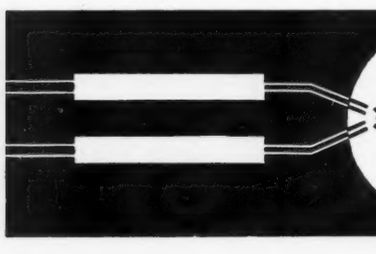

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